



anahp
associação nacional
de hospitais privados

OBSERVATORIO 2020

Annual Publication – Number 12

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Anahp facts and figures

ANAHP HOSPITALS HOLD **28.57%** OF NATIONAL ACCREDITATIONS AND **79.76%** OF INTERNATIONAL ACCREDITATIONS

REPRESENTATIVENESS



R\$ 40.10 billion

in gross revenue of 119 member hospitals in December 2019



122 members

in April 2020



24.19 % of the total clinical expenditures

in private health care in 2019



28,288 beds

in December 2019:

11.35% of the total private (for profit and not-for-profit) beds available in Brazil



6,665 ICU beds

in December 2019



10.64 million

visits to the Emergency Department in 2019

2019			
Accreditation	Anahp*	Brazil	ANAHP
ONA 3	58	179	32.40%
Qmentum International	37	41	90.24%
JCI	28	38	73.68%
ONA 2	23	86	26.74%
ONA 1	19	85	22.35%
DIAS/NIAHO	2	5	40.00%
TOTAL	167	434	38.48%
International	67	84	79.76%

*Anahp hospitals may hold more than one accreditation.

ANAHP HOSPITALS ARE HIGH-COMPLEXITY CENTERS

67.23%

large-sized and special organizations



32.77%

small and medium-sized organizations

IN 2019, THERE WERE:



107,746,532
PERFORMED
TESTS

1,891,411
HOSPITALIZATIONS



1,926,716
SURGERIES

53.33% OF THE
ORGANIZATIONS
PERFORMED
TRANSPLANTS



ABOUT 200,000
JOBS IN MEMBER
HOSPITALS

15.70% OF FORMAL
EMPLOYEES IN
HOSPITAL ACTIVITIES

2017 **162,980**

2018 **173,644**

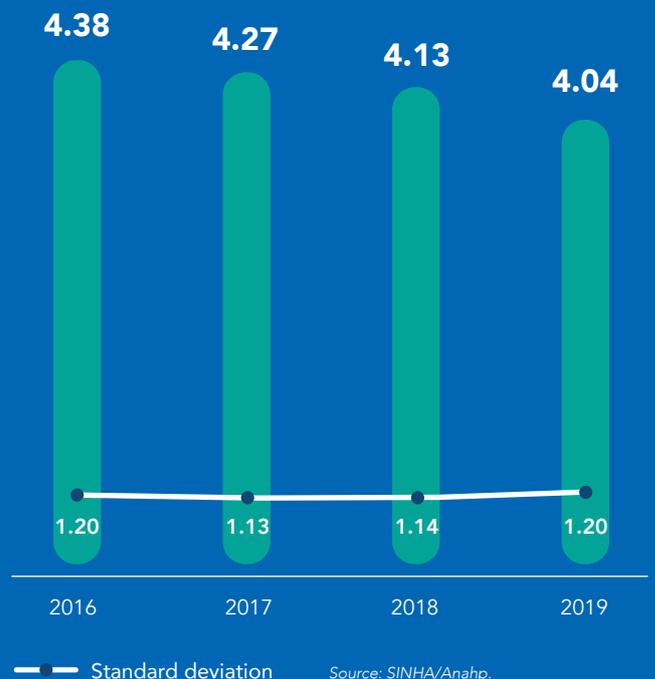
2019 **197,446**



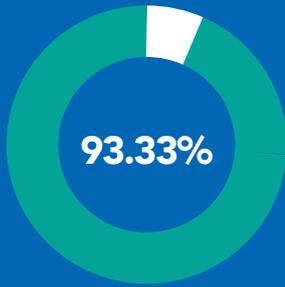
RATE OF GENERAL OPERATIONAL OCCUPANCY (%)



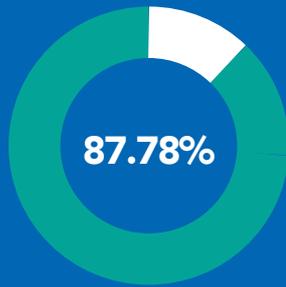
MEAN LENGTH OF STAY (DAYS)



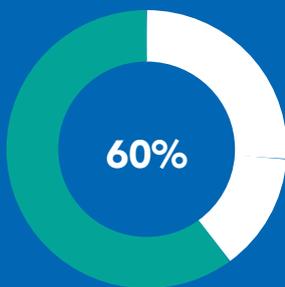
COMPLIANCE



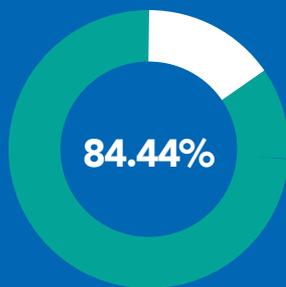
of hospitals have a code of conduct



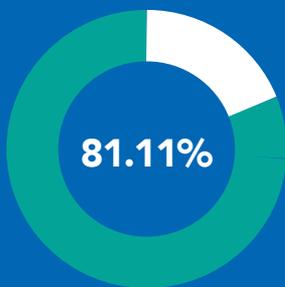
of the organizations have an ethics and compliance committee



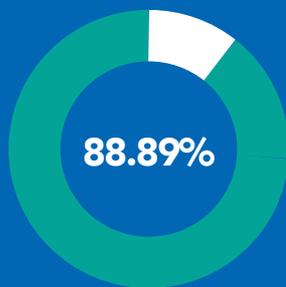
have a compliance officer or department/area



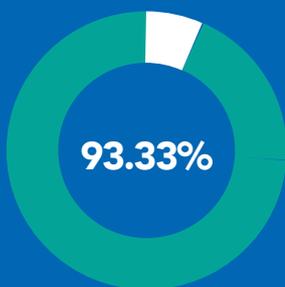
of the organizations know their main critical ethical and compliance topics



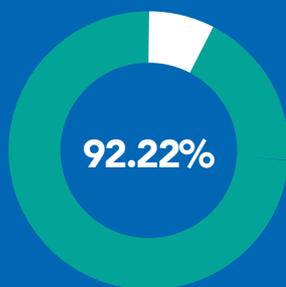
of the hospitals educate and communicate their staff about ethical and compliance topics



of the organizations have a report channel dedicated to ethical issues



of the organizations have policies and rules that include administrative consequences and/or disciplinary measures in case of violation of laws or rules of conduct



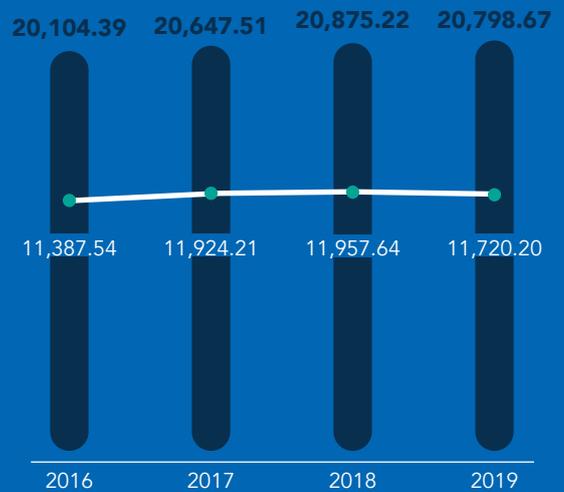
of the hospitals have independent internal audit that reviews and recommends improvement actions for internal controls

Source: SINHA/Anahp

NET REVENUE AND TOTAL EXPENSES PER HOSPITAL DISCHARGE (R\$)

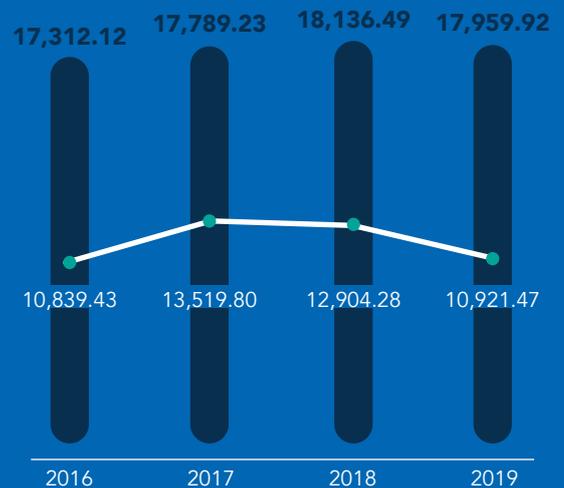
Average Anahp hospitals

Net revenue per hospital discharge



Standard deviation Source: SINHA/Anahp.

Total expenses per hospital discharge



Standard deviation Source: SINHA/Anahp.

Average days of sales outstanding (days)

Average Anahp hospitals



— Standard deviation Source: SINHA/Anahp.

Denial rate (% of net revenue)

Average Anahp hospitals



— Standard deviation Source: SINHA/Anahp.

DISTRIBUTION OF TOTAL EXPENSES ACCORDING TO TYPE OF EXPENSES (%)

Average Anahp hospitals

Source: SINHA/Anahp.

Type of expenses	2018	2019	Standard deviation 2019
Cost with Personnel	37.32	37.03	11.86
Technical and operational contracts	13.72	14.33	8.82
Medication	10.79	10.63	4.48
Other expenses	8.18	9.09	9.50
Implants and Special Materials	7.18	6.56	4.09
Materials	6.37	5.74	2.26
Support and logistic contracts	4.27	4.03	3.05
Other supplies	2.77	3.13	1.91
Depreciation	2.87	2.82	1.14
Utilities	2.24	2.23	1.35
Financial expenses	2.06	2.15	2.36
Maintenance and Services	1.91	2.03	1.28
Medical gases	0.32	0.23	0.16

DISTRIBUTION OF GROSS REVENUES ACCORDING TO TYPE (%)

Average Anahp hospitals

Source: SINHA/Anahp.

Type of Revenues	2018	2019	Standard deviation 2019
Medication	24.66	25.75	10.22
Daily fees and rates	21.65	22.90	8.19
Other operational revenues	19.01	19.02	11.49
Materials	20.36	18.32	8.34
Implants and Special Materials	8.30	8.27	4.95
Other revenues from services	3.39	3.45	4.72
Medical gases	2.30	1.83	1.10
Donations	0.34	0.46	1.08

Masthead

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Letter to the reader



For the first time ever since the creation of Observatorio Anahp we will not open this edition with key performance indicators. It is absolutely necessary to present a brief analysis of the world situation we experience while this publication is being made, testing everything that has been carefully and purposely created for the benefit of healthcare. It has been a pleasure to describe the competence of our member hospitals, which are now facing, alongside the whole healthcare system, what is possibly the hardest challenge in our history.

In the end of 2019 and more markedly in the beginning of 2020, healthcare systems around the world rendered weak in view of the overwhelming transmission power of the new coronavirus. Within three months, the pandemic caused by COVID-19 led to the collapse of healthcare around the globe, affecting from superpowers to developing countries.

Counting over 4 million people infected in the world (at the date of this publication), the new coronavirus has proved to be capable of causing systemic damage to healthcare, economy, politics and interpersonal relationships.

There are ongoing studies predicting the peak of the pandemic in Brazil, but it is difficult to state for sure when it will happen, as it all depends on preventive and protective

measures adopted by the federal and state governments, and the individual behavior of each citizen in complying with the actions to protect and prevent dissemination.

There is still much uncertainty, but we should not fail to recognize the lessons learned so far. We can see the efforts of the Ministry of Health in conducting the situation as best as possible. All players in the system - hospitals, healthcare management companies, material and medication manufacturers, have been impacted by the grandiosity of the problem and together we have been trying to find solutions to face the practical challenges such as fight against supplies shortage, increase availability of well-equipped ICU beds to meet the demands of patients infected by COVID-19, increase healthcare professionals headcount to serve patients, among other measures.

Unfortunately, we cannot report the outcome of the pandemic yet in this edition. The world is still fighting against COVID-19 but we have already learned valuable lessons.

Therefore, despite the all the initiatives employed to cope with COVID-19, we should not fail to acknowledge the key role that Observatorio has in the market in providing broad reliable data about the industry, which serves as source to the government, the National Healthcare Private Agency (ANS), the media, academia and the society at large.

For this reason and maintaining our commitment with transparency in disseminating high-quality information, we decided to release this year's version in May, as always. Nevertheless, through specific articles about the topic, we will address the challenges that the world has been facing during the pandemic. We strongly believe that working together, powered by qualified and transparent information, we will be able to fight one more battle, becoming a stronger and efficient industry to serve people.

Now back to the numbers.

2020 edition brings improved data based on market and hospital demands, as the purpose of the association goes: focus on continuing improvement of its initiatives. In 2019, Anahp had 8% increase in number of member hospitals, showing the growing engagement of Brazilian hospitals with clinical quality and safety, a supporting pillar of the association development. Therefore, our database SINHA (Anahp Integrated System of Hospital Indicators) has also expanded, increasing its representativeness as a reference in healthcare.

Concerning the economic landscape in 2019, the country still showed difficulties to recover. On the one hand, the market presented slight increase in generating formal jobs (644,000 new jobs) and unemployment rates kept dropping (11.93%); on the other hand, the Gross Domestic Product (GDP) showed timid growth (1.14% in 2019) for the third consecutive year after the period of recession. In 2020, the impact of the pandemic will lead to significant worsening of economic and social indicators in Brazil, increasing further the challenge to be addressed by the healthcare industry in particular.

When analyzing the member hospital data, the significant days of sales outstanding of healthcare providers and the high level of denials have negatively influenced the operations, reducing revenues and compromising cash flow. In a still challenging economic situation, the use of best practices is essential to maintain good clinical outcomes. Here are some highlights:

- Net revenue per hospital discharge increased 0.37% in 2019, whereas total expenses per hospital discharge decreased 0.97% in the same period.

- Labor expenses, which include full-time employees and technical contractors, amounted to over 50% of Anahp hospital expenses in 2019.
- In 2019, 89.91% of the revenues of Anahp hospitals resulted from resources administered by healthcare operators.
- The occupancy rate went up from 76.94% in 2016 to 76.85% in 2017.
- The mean length of stay, in turn, dropped from 4.27 days in 2017 to 4.13 days in 2018.

This edition of Anahp Observatorio addressed some unique and relevant topics to the industry, such as: the impact of the new coronavirus pandemic and its challenges to Brazilian healthcare system; the economic relevance to health industry in the country; an article wrote by health economist and international consultant Andre Medici; Anahp Outcomes Program shows an overview of the methodology and the implementation of standard set in heart failure, which has become a model in the world; in addition to the perspective for the next decade of healthcare in the country – Brazil Health 2030, which is the theme of CONAHP this year (National Congress of Private Hospitals), whose discussions will certainly evolve around the world challenges in coping with a massive pandemic such as the one caused by COVID-19.

Having in mind the true objective of contributing with the market and improving service quality, we have presented, with no restrictions, the performance of Anahp member hospitals. Observatorio is a tool that reflects the increasing concerns of the Association about key topics in the industry, hoping that stakeholders can together find solutions to provide system sustainability. The initiative adopted by Anahp also emphasizes our commitment with transparency.

We would like to thank the valuable participation of the Editorial Board and our special thanks to the technical team that has worked nonstop for months so that Observatorio could be ready on time to contribute once again with the Brazilian healthcare industry.

Enjoy the reading.



Note on methodology

Two primary information sources are used to create Observatorio Anahp, as described below

1. SINHA – Integrated System of Hospital Indicators.

Data inputted monthly

SINHA was created in 2003 to provide timely well-organized information about financial, operational, clinical and human resources performance of member hospitals, supporting managers in strategic planning and decision-making. Eventually, the system has gained more importance in the industry, becoming one of the main market references in hospital indicators after the annual publication of Observatorio Anahp, which started in 2008.

In 2016, SINHA went through an important process of redesigning the indicators, promoted by Anahp Work Groups. The standardization was necessary to monitor the indicators required from our members in the market.

Anahp indicators have standardized technical forms available for consultation in the system and submitted to members for better understanding and data input into the system. Inputted data are validated by technical directors and/or responsible people of each area in the hospitals. In 2019, there were 343 variables and 269 indicators from 109

hospitals that contributed with data to SINHA – 90.83% of member hospitals in December 2019.

Participation is voluntary, reason why the number of participating organizations in each indicator may vary. In addition, new members start to gradually submit data to the database.

Each hospital has access to individual reports, which provides them with benchmark opportunities against the group of Anahp hospitals. There is the possibility of breaking down indicators by size, state and region and number of beds, among others. It provides a comprehensive analysis of the industry trends, and each

hospital can compare itself against the average indicators of the groups of hospitals with similar structures.

Epidemiology profile of the organization, also shared using SINHA platform, provides identification of trends in conditions presented by associated centers, including regional characteristics.

A total of 65.55% of Anahp hospital members in 2019 submitted the data, that is, 78 out of 119 member hospitals in December 2019 submitted their epidemiological profile.

Information requested to member hospitals includes hospital discharges and the variables for each hospital encounter, as shown below.

Number of patient record

Number of encounter

Date of birth	Gender		
Zip Code	District	City	State

ANS payor's code

Treatment site - inpatient unit

Admission Date	Hospital discharge date
----------------	-------------------------

Main diagnosis according to International Code of Diseases (ICD-10)

(only one diagnosis per hospital discharge; use five-character ICD pattern)

Secondary diagnosis 1 ICD-10

(only one diagnosis per hospital discharge; use five-character ICD pattern)

Secondary diagnosis 2 ICD-10

(only one diagnosis per hospital discharge; use five-character ICD pattern)

Performed Procedure 1 (code according to Universal Healthcare System - SUS with Brazilian Medical Association) AMB or Unified SUS Terminology (TUSS)	Date of surgical procedure 1 (if surgical procedure)
Performed Procedure 2 (code according to SUS, AMB or TUSS)	Date of surgical procedure 2

Type of discharge

(discharge home, death or external transfer)

Date of first admission into the Intensive Care Unit (ICU) (caso tenha passagem na UTI)	Date of the last ICU discharge (internal transfer, discharge or death)	Number of ICU encounters
Use of mechanical ventilation (yes or no)	Days of mechanical ventilation use	

Newborn weight

(if maternity, in Kg)

Description of origin of patient

Emergency Department, home, medical office, others)

Amount billed

The systematic collection provides a detailed analysis of the production, performance results, and consumption patterns of provided services.

2. Annual registration of hospitals

Information concerning structure, production of selected areas, clinical information, characteristics of quality and safety programs in the hospitals, management of clinical staff, teaching and research and philanthropy activities. This survey is made annually with all member hospitals.

Participating hospitals: relevant modifications in recent years

In December 2019, Anahp had 120 associated hospitals (119 hospitals and 1 home care company), 9 of which joined the organization in that year.

The inclusion of new members in recent years has contributed to greater representativeness of private hospitals in Brazil. Since 2016, the information of the 23 hospitals that formed the Control Group is no longer presented. Anahp has had the data of a broad sample of hospitals since 2014 and we want to provide representative and comprehensive information that portrays the reality of all member hospitals. For data validation purposes and consistent analysis, in some situations we use comparisons based on the same hospitals that completed the data in a given period of time.

It is important to bear in mind that the analysis of indicators is made by Nucleo de Estudos e Analises (NEA – Center of Studies and Analyses), maintaining the confidentiality of hospital information. This edition of Observatorio Anahp gathers data from 109 hospitals that have submitted their information through SINHA (clinical, people management, economic-financial and sustainability data), even though not all of them have provided information concerning all available variables.

Despite hospitals' variability, it was possible to reach consistency by analyzing the tendency of indicators in the group of members. Data availability has also provided to hospitals more detailed monitoring of the indicators, a process that tends to improve with the use of the new SINHA platform.

Contributions from the academia

NEA has built this chapter to present the analysis based on the literature, providing enhanced data for member hospital decision-making process.

Data from SINHA database from January to December 2019 were used. Correlations of all possible variable pairs were calculated, based on Spearman correlation coefficient, whose method does not depend on assumptions such as normal distribution and data series linearity. Next, we selected the results that referred to the content of the studied papers. Data were analyzed based on scientific and academic references from the literature.

Analyses and indicators are presented as follows:

- ✓ **Clinical and epidemiological profile of patients**
- ✓ **Structure and Annual Production:**
 - characterization of hospitals according to complexity criteria, which provides comparisons with similar structures.
- ✓ **Clinical Performance:**
 - Operational management;
 - Quality and safety;
 - Institutional protocols;
 - Home care.
- ✓ **Institutional Performance**
 - Economic-financial management;
 - People management;
 - Environmental sustainability;
 - Information technology.

EM 2020, UMA PANDEMIA MUDOU TUDO.

E o maior
congresso
hospitalar do
Brasil só teria
um caminho:

CRIAR UMA EDIÇÃO EXTRAORDINÁRIA.

Novembro



100% DIGITAL



RENDA REVERTIDA
PARA O COMBATE
À COVID-19

Esperamos
você, com o
conteúdo de
excelência
de sempre.



CONAHP
Congresso Nacional
de Hospitais Privados
2020

Brasil Saúde 2030:
um novo olhar
para o sistema
brasileiro de saúde

#vamosfazerjuntos?

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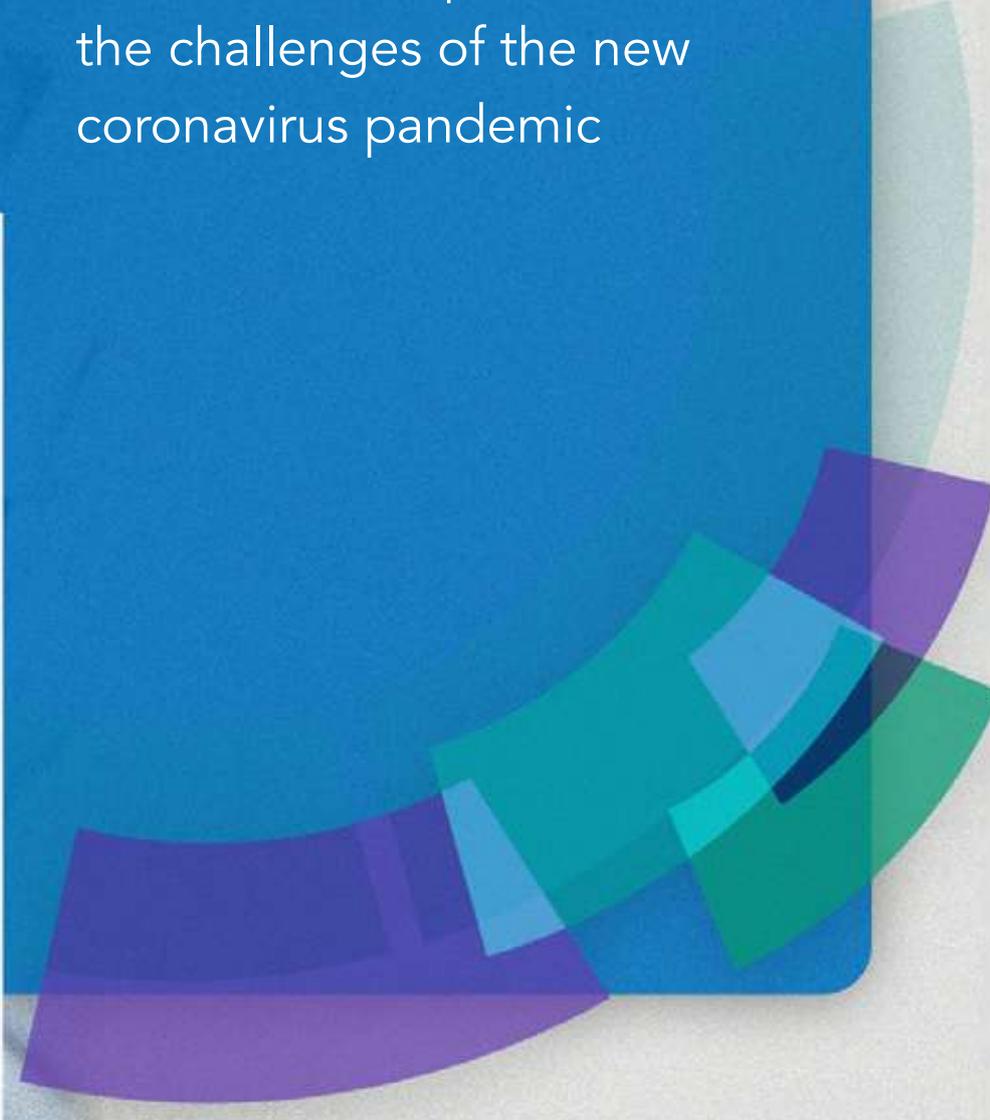
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Articles

Analysis of extremely important topics to the industry that serve as input for Anahp discussions in events, work groups and publications. In addition to an exclusive piece on the challenges of the new coronavirus pandemic



ARTICLE

New coronavirus:

overview of the
pandemic and
the main coping
strategies to
face the challenges

The background features a large, abstract graphic on the right side. It consists of several overlapping, curved, semi-circular segments in shades of teal and purple. The background behind these shapes is dark, resembling a night sky with numerous small, bright blue and white stars. The overall composition is modern and dynamic.



COVID-19 (coronavirus disease 2019), as classified by the World Health Organization (WHO), is a syndrome caused by the new coronavirus (SARS-CoV-2). COVID-19 outbreak started in the city of Wuhan, in China, in the end of December 2019, where the first suspected transmissions from

animals to humans were detected, before the transmission among humans. This is the third outbreak caused by coronaviruses, after the SARS (severe acute respiratory syndrome) outbreak in 2003 and the MERS (Middle East respiratory syndrome) one in 2012¹.

COVID-19 spread quickly from

China to the world. On January 30, 2020, WHO declared the disease outbreak as a public health emergency of international concern and on March 11 it was classified as a pandemic². Until now (May 2020), over 4 million people have been infected and over 270,000 have died of the disease³.

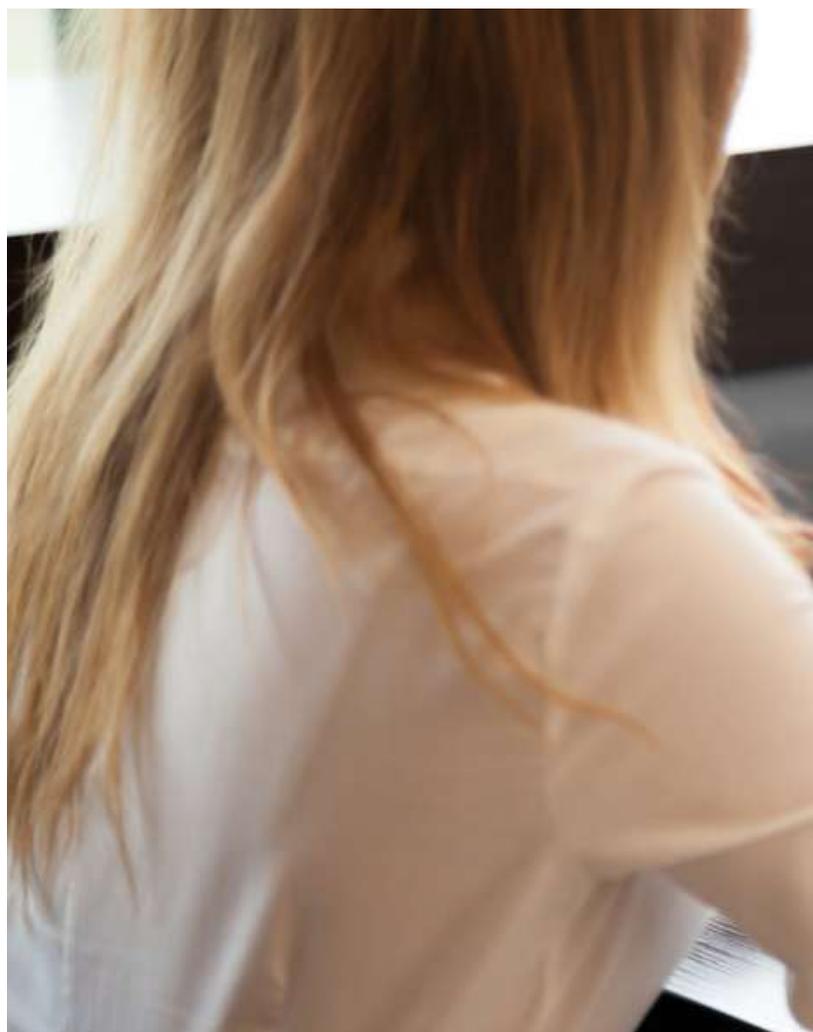
¹ DAVENNE, E.; GIOT, J. B.; HUYNEN, P. "Coronavirus et COVID-19: le point sur une pandémie galopante. / [Coronavirus and COVID-19: Focus on a Galloping Pandemic]". In: *Revue Médicale de Liège*. Liège, v. 75, n. 4, p. 218-225, abr. 2020. Available on: <https://pesquisa.bvsalud.org/portal/resource/en/mdl-32267109>, Accessed on 27/04/2020.

² ORGANIZAÇÃO PAN-AMERICANA DE SAÚDE. Folha Informativa – COVID-19 (Doença Causada pelo Novo Coronavírus). Brasília, abr. 2020. Available on: https://www.paho.org/bra/index.php?option=com_content&view=article&id=6101:covid19&Itemid=875; accessed on 27/04/2020.

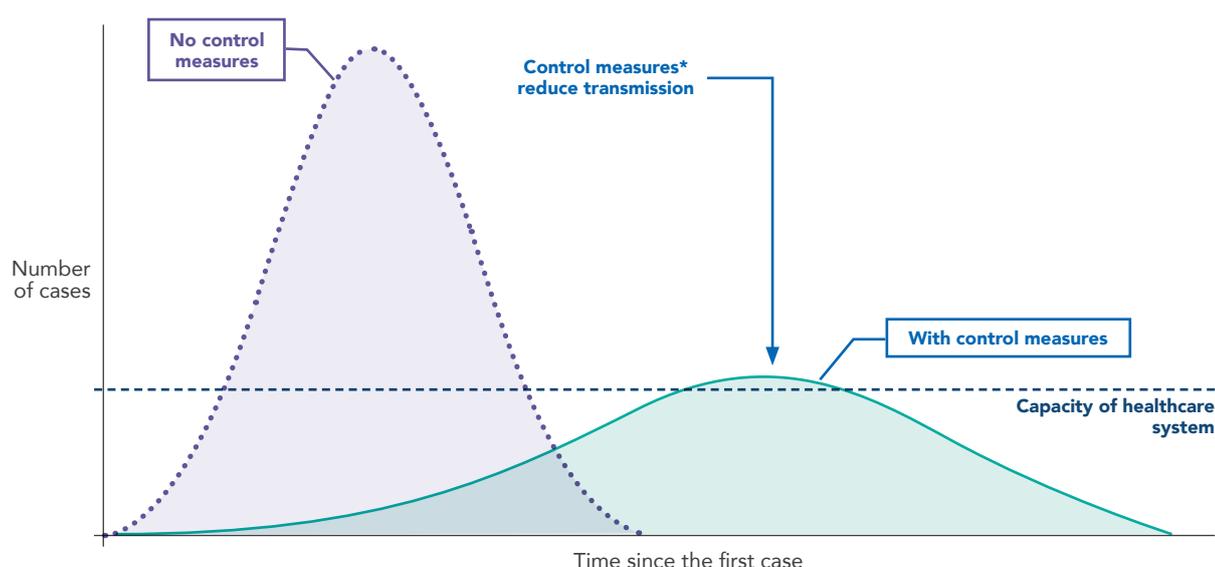
³ WORLD HEALTH ORGANIZATION (WHO) [Organização Mundial da Saúde (OMS)]. WHO Coronavirus Disease (COVID-19) Dashboard. Available on: <https://covid19.who.int/>; Accessed on 11/05/2020.

In the world, current data have suggested that 80% of the infections are mild or asymptomatic, 15% are severe infections, which require oxygen support, and 5% are critical infections, requiring mechanical ventilation. These fractions of severe and critical infections are higher than those observed for common cold. Lethality of recorded cases is about 3 to 4% (number of deaths per reported cases). Even though actual mortality rate takes a while to be understood, it is believed that the number of deaths per infection may be lower, but it is certainly higher than that of deaths caused by influenza, which is below 0.1%⁴.

The strategy to manage the disease is to reduce transmission by adopting appropriate hand hygiene and disinfection measures, in addition to social distancing, which reduces interpersonal relations and protects the risk population⁵. Population isolation is an essential measure to fight against the new coronavirus. It is important to adopt general isolation, because if young professionals which are not at risk remain active in the market place, they will continue to be virus transmission vectors. Social distancing is essential to flatten the infection curve, enabling the healthcare system to get prepared.



HOW TO DELAY THE EPIDEMIC PEAK



*It includes hand washing, work from home, restrictions to crowds, trips, shows, conferences, events, classes, etc.

Source: Graph prepared by specialist in community health Drew Harris and adapted by biologist Carl Bergstrom. Image: Carl Bergstrom and Esther Jim/ CC by 2.0.

⁴ WORLD HEALTH ORGANIZATION (WHO) [Organização Mundial da Saúde (OMS)]. Coronavirus Disease 2019 (COVID-19) Situation Report – 46. Genebra, 6 mar. 2020. Available on: <https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200306-sitrep-46-covid-19.pdf?sfvrsn=96b04adf_4>; accessed on 27/04/2020.

⁵ DAVENNE, E.; GIOT, J. B.; HUYNEN, P. "Coronavirus et COVID-19: le point sur une pandémie galopante." [Coronavirus and COVID-19: Focus on a Galloping Pandemic]". In: Revue Medicale de Liège. Liège, v. 75, n. 4, p. 218-225, abr. 2020. Available on: <<https://pesquisa.bvsalud.org/portal/resource/en/mdl-32267109>>; accessed on 27/04/2020.



“
Social distancing
is essential
to flatten the
infection curve”

The impact on healthcare is quite high due to the fast dissemination. If a large number of people get sick at the same time, hospitals will become overloaded. There is no healthcare system capable of serving the large volume of patients who need support such as the one required for COVID-19 infected patients at the same time.

Healthcare professionals play a key role in the frontline, providing care to patients. However, many end up getting infected and have to go on leave. In some countries, the number of infected healthcare professionals reached over 10% of the cases. Correct use of personal protective equipment (PPE) appropriate to the clinical setting and compliance with hand hygiene and other prevention and infection control measures reduce substantially the risk to healthcare professionals⁶.

To deal with limited supplies in the world, including PPE, diagnostic materials and medical equipment, WHO defined a task force as a global strategy to ensure access to essential supplies in all countries. Moreover, it has strengthened supply chains, anticipating necessary supplies and sending critical shipments⁷.

In Brazil, despite the increasing number of cases and deaths, there was enough time to learn from the experience of other countries, as the virus dissemination came later to the country. Up to the date this article was written, there had been indications that social distancing measures were adopted in most states of the country, helping reduce the contamination curve, which is fundamental to avoid overwhelming the healthcare system⁸.

⁶ WORLD HEALTH ORGANIZATION (WHO) [Organização Mundial da Saúde (OMS)]. Coronavirus Disease 2019 (COVID-19) Situation Report – 82. Genebra, 11 abr. 2020. Available on: <https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200411-sitrep-82-covid-19.pdf?sfvrsn=74a5d15_2>; accessed on 27/04/2020.

⁷ WORLD HEALTH ORGANIZATION (WHO) [Organização Mundial da Saúde (OMS)]. Coronavirus Disease 2019 (COVID-19) Situation Report – 85. Genebra, 14 abr. 2020. Available on: <https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200414-sitrep-85-covid-19.pdf?sfvrsn=7b8629bb_4>; accessed on 27/04/2020.

⁸ FIGUEIREDO, P. “Apesar de provável subnotificação e atraso de exames, especialistas veem indícios de achatamento da curva do coronavírus em SP”. In: G1. São Paulo, 15 abr. 2020. Available on: <<https://g1.globo.com/sp/sao-paulo/noticia/2020/04/15/apesar-de-provavel-subnotificacao-e-atraso-de-exames-especialistas-veem-indicios-de-achatamento-da-curva-do-coronavirus-em-sp.ghtml>>; accessed on 27/04/2020.



According to the National Registry of Healthcare Facilities (CNES - Cadastro Nacional de Estabelecimentos de Saude), in February 2020 there were 339,000 general beds and 45,000 ICU beds in the private and public sector (SUS). The ICU bed rate is 2.17 beds per 10,000 inhabitants. This number is as good as in many developed countries; however, these beds are not distributed evenly throughout Brazil.

A study carried out by the Center for Regional Development and Planning (Cedeplar - Centro de Desenvolvimento e Planejamento Regional) and by Study Group of Health Economics and Criminal Activity (Geesc - Grupo de Estudos em Economia da Saude e Criminalidade) from Universidade Federal de Minas Gerais (UFMG) has matched the supply and demand for cases of COVID-19 in the Brazilian Healthcare system. In the absence of policies to harness disease dissemination, at 1% infection rate of the population within one month more than half of microregions in

the country would be operating above their ICU bed capacity. In the long run, if the infection rate reached 10% in six months, all microregions would surpass their ICU bed capacity⁹.

The challenge to SUS is even greater, as the system is responsible for caring for 150 million people, most of them from low-income social groups, who live in communities that have poor basic sanitation conditions. These people suffer even more as social distancing is not feasible to them, owing to the fact that they tend to live in overcrowded houses. Most of them also survive of informal jobs and they are being financially affected by the suspension of economic activities, which means governmental financial aid is essential, required also to enable higher compliance with social distancing measures.

Drastic but necessary measures employed to cope with COVID-19 will lead to significant social and economic impacts in Brazil and in the whole world. The World

⁹ NORONHA, K.; GUEDES, G.; TURRA, C. M.; ANDRADE, M. V.; BOTEGA, L.; NOGUEIRA, N.; CALAZANS, J.; CARVALHO, L.; SERVO, L.; AMARAL, P. Nota Técnica: Análise de demanda e oferta de leitos hospitalares gerais, UTI e equipamentos de ventilação assistida no Brasil em função da pandemia do COVID-19: impactos microrregionais ponderados pelos diferenciais de estrutura etária, perfil etário de infecção e risco etário de internação. Cedeplar/Geesc. Belo Horizonte, 2020. Available on: <<https://geesc.cedeplar.ufmg.br/wp-content/uploads/2020/03/Nota-tecnica-final-COVID-19-revisado2.pdf>>; accessed on 27/04/2020.

Bank estimates 5% drop in Brazilian GDP. Significant measures to reduce these impact include, in addition to financial aid to informal workers, facilitated credit lines to support companies, payment postponement of taxes and social charges, and support to payroll payment to avoid mass laid-off. In Brazil, fiscal incentives are estimated to reach almost 6% of GDP¹⁰.

For the time being, there is no scientific confirmation of effective treatment to the disease and no one knows when a vaccine will be developed and made available to the population. Thus, the recommendation of social distancing, plus hygiene recommendations, are important measures to minimize the dissemination of the virus, reducing the number of infected cases in time.

Social distancing also provides a window for healthcare system to gain time, but it is not the only measure adopted to face the new coronavirus. WHO recommends the adoption of lockdown measures which consists of: expand and train the healthcare workforce; implement a system to find all suspected cases; increase the production, capability and availability of tests; identify, adapt and equip the facilities that will be used to manage and isolate patients; develop clear

plans and processes to place people in quarantine, and reeducate the government to control COVID-19. These are the best measures to suppress and interrupt transmission, so that when restrictions are released, there is no virus resurgence¹¹.

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Hygiene
recommendations
are important elements
to minimize
virus dissemination”



¹⁰ WORLD BANK. Semiannual Report of the Latin America and Caribbean Region. The Economy in the Time of COVID-19. 12 abr. 2020. Available on: <<https://openknowledge.worldbank.org/bitstream/handle/10986/33555/9781464815706.pdf?sequence=5>>; accessed on 27/04/2020.

¹¹ GHEBREYESUS, T. A. "WHO Director-General's Opening Remarks at the Media Briefing on COVID-19 - 25 March 2020". 25 mar. 2020. Available on: <<https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19-25-march-2020>>; accessed on 27/04/2020.

Challenges of Brazilian healthcare system in coping with the new coronavirus

The first patient identified with the new coronavirus in Brazil was detected on February 26, 2020, after returning from a trip abroad. After this case, others quickly added to the count, first with people who had been abroad or had contact with people with suspicion and/or confirmation of COVID-19 infection.

There are ongoing studies to predict the peak of the pandemic in Brazil, but it is difficult to state for sure when it will happen, as it all depends on preventive and protective measures adopted by the federal and state governments, and the individual behavior of each citizen in complying with the actions to protect and prevent dissemination.

In February, at the onset of the pandemic in Brazil, one of the main difficulties, already evident in global scale, was supplies' shortage, especially of PPEs. Consumption of these items increased significantly in the world due to the pandemic that spread fast. To make things worse, China was completely isolated and it is one of the main global manufacturers of these products. This gave rise to the first structural battle of this pandemic.

In view of supplies shortage, some manufacturers took advantage of the moment and charged almost 500% overprice, according to a survey held by Anahp with its members. Imports became an alternative to supply hospital needs, but new challenges were on the horizon, such as the fierce competition from countries such as the USA, which absorbed the whole production of PPEs and mechanical ventilators in the world market.

Moreover, in Brazil, anticipating the arrival of COVID-19, the Congress passed Law 13.979 on February 6, including a number of measures that interfered with fundamental rights and regular rules of the public administration, which include the requisition of goods and services from individual and corporate entities. These measures were not limited to the coordination and control of the Federal



Supplies' shortage, especially of PPEs



Some manufacturers took advantage of the moment and charged almost 500% overprice



Fierce competition from countries such as the USA, which absorbed the whole production of PPEs and mechanical ventilators in the world market



Requisition of goods and services from individual and corporate entities



Suspension of elective procedures



Government, did not prevent the adoption of less severe actions, but still portrayed acts of abuse of authority. In an extreme case, a city in the state of Sao Paulo, holding a court order, seized equipment under the Federal Government that had already been acquired by private organizations, including hospitals that served SUS.

The same requisitions extended to inpatients and ICU beds. However, it is important to clarify that in Brazil 62% of the 440,000 inpatients beds are housed by private hospitals. Out of the total, 52% are already provided to the public sector. According to data of the Ministry of Health, in 2017, about 60% of high-complexity hospital admissions of SUS patients were made at private organizations, most of them of philanthropic nature.

Another important challenge experienced by the private sector was the suspension of elective procedures. This is a recommendation of agencies such as WHO and

Ministry of Health: these measures should be adopted in a situation of crisis, such as the one we are going through, with many patients infected by COVID-19 who need specialized care. Anahp agrees with this recommendation in such cases. Nevertheless, at that time, the national reality was still not so serious and hospitals had to deal with the challenge of maintaining financial sustainability despite the low occupancy rates, significant increase of costs with supplies and about 5% of the workforce on medical leave due to new coronavirus infection.

Unfortunately, we cannot report the outcome of the pandemic yet in this edition. The world is still fighting against COVID-19, but we have already learned important lessons and the frailty of healthcare systems in the world has been exposed, both in developed and developing countries. We are all together fighting the same war.

ARTICLE

Economic relevance of health sector in Brazil

By **André Cezar Medici**,
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The purpose of this article is to assess the economic relevance of the health sector in Brazil, taking into consideration its share in the Gross Domestic Product (GDP) in past years (2010-2017), according to the most recent data from the Health Satellite Account (CSS - Conta-Satélite de Saúde), published in 2019 by IBGE - Brazilian Institute of Geography and Statistics¹.

CSS approach stems from the classic macroeconomic balance between consumption (or health expenditures of specific sector players), production (or share of specific health activities in generating added value), and income (amount of salaries and compensation that form the income of the sector players). The players encompass the government and families (including in this case not-for-

profit organizations that provide health services to families). This analysis will also approach the final and intermediate consumption of healthcare, taking into consideration the specific supplies used for the area production, such as pharmaceutical products and medical equipment². Foreign trade in health (imports and exports) throughout the years will also be analyzed, to check to what extent the sector depends on external sources.

The final part of this article will discuss how the new coronavirus pandemic may affect the economy and production of health, through its final and intermediate consumption of goods and services, which may take the health industry to redefine its contribution to national development once the economy starts to pick-up again.

¹ IBGE. "Conta-Satélite de Saúde: Brasil 2010-2017". In: Contas Nacionais. Rio de Janeiro, n. 71, dez. 2019. Available on: <https://biblioteca.ibge.gov.br/visualizacao/livros/liv101690_informativo.pdf>; accessed on 05/05/2020. IBGE. "Conta-Satélite de Saúde: Brasil: 2010-2017 – Notas técnicas". In: Contas Nacionais. Rio de Janeiro, n. 71, dez. 2019. Available on: <https://biblioteca.ibge.gov.br/visualizacao/livros/liv101690_notas_tecnicas.pdf>; accessed on 05/05/2020.

² Unfortunately, there is no recent or detailed information about specific subsectors of health in the datasource used by IBGE.

The burden of health expenditures in Brazilian economy

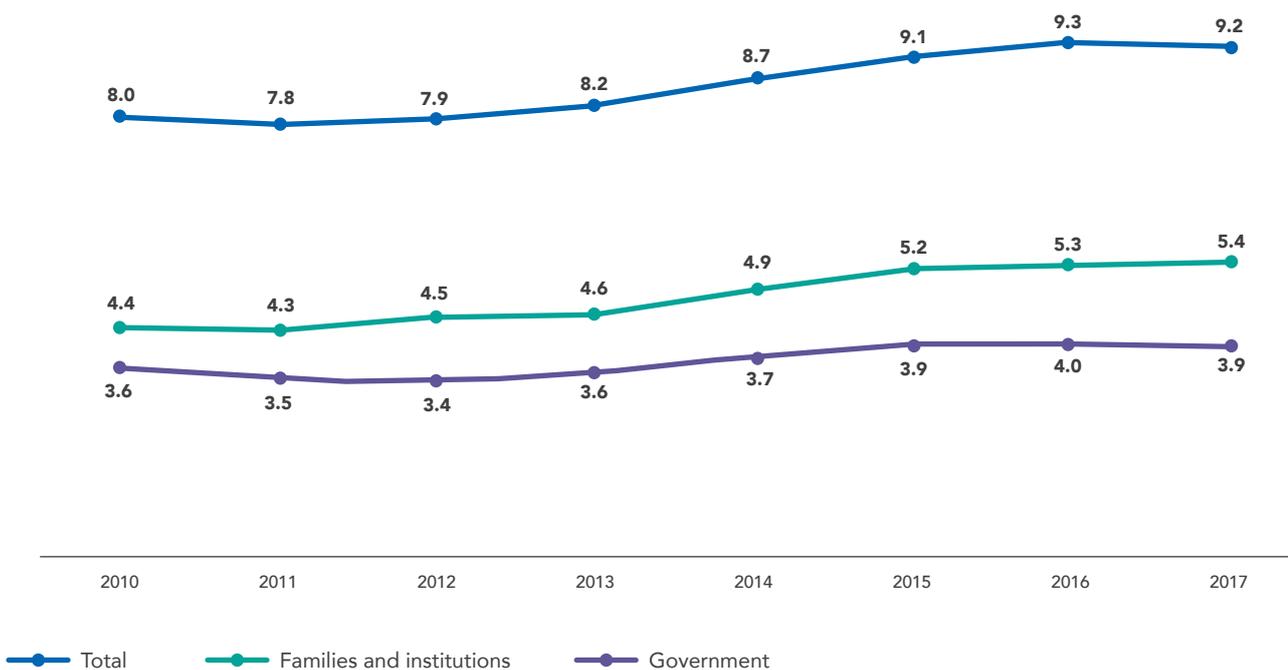
Since 2014, Brazil has been facing one of the longest economic crises ever, impacting government and family expenditures in different sectors, including health. Ranging from decreasing GDP rates in some years (2015 and 2016) to 1% increase in rates in others (2017 to 2019), expenses (or expenditures) in health increased from 8% to 9.2% of GDP between 2010 and 2017 **(Graph 1)**.

Throughout 2010-2017, the share of health expenditures over GDP increased from 4.4% to 5.4% for families, whereas they increased 3.6% to 3.9% for the government in the same period. In other words, between 2010 and 2017, health expenditures by the government decreased from 45% to 42%, whereas for families the numbers went from 55% to 58%. The share of healthcare expenditures of the government

over Brazilian GDP, after reducing from 3.6% to 3.4% between 2010 and 2012, resumed growing in 2013-2014, when Brazilian economy plummet. As of 2013, the share of health expenditures by the government increased to reach 4% of GDP in 2016, when the crisis was at its worst moment, and it went down again to 3.9% in 2017, the year when the GDP started to increase slightly (1.3%).

The growth of total expenses was lower than the GDP in the beginning of the decade, but increased strongly in 2013 and 2014. As a result of the negative GDP increase in years 2015 and 2016, the expenditures started to decrease again and reduced drastically in 2017 due to weak GDP growth, employment crisis and decrease in family income, leading to significant decrease in actual health expenditures **(Graph 2)**.

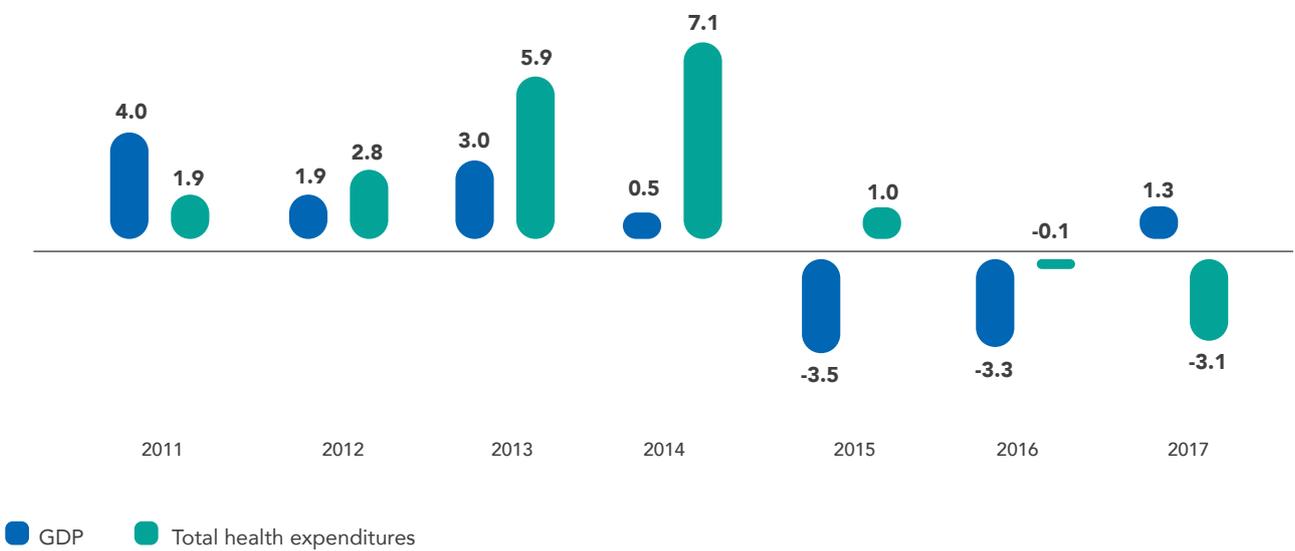
GRAPH 1 | Share of health expenditures over GDP in Brazil (%) | 2010-2017



Source: IBGE, Conta-Satelite da Saude Brasil 2010-2017



GRAPH 2 | GDP growth vs. actual health expenditures growth rates (%) | 2010-2017

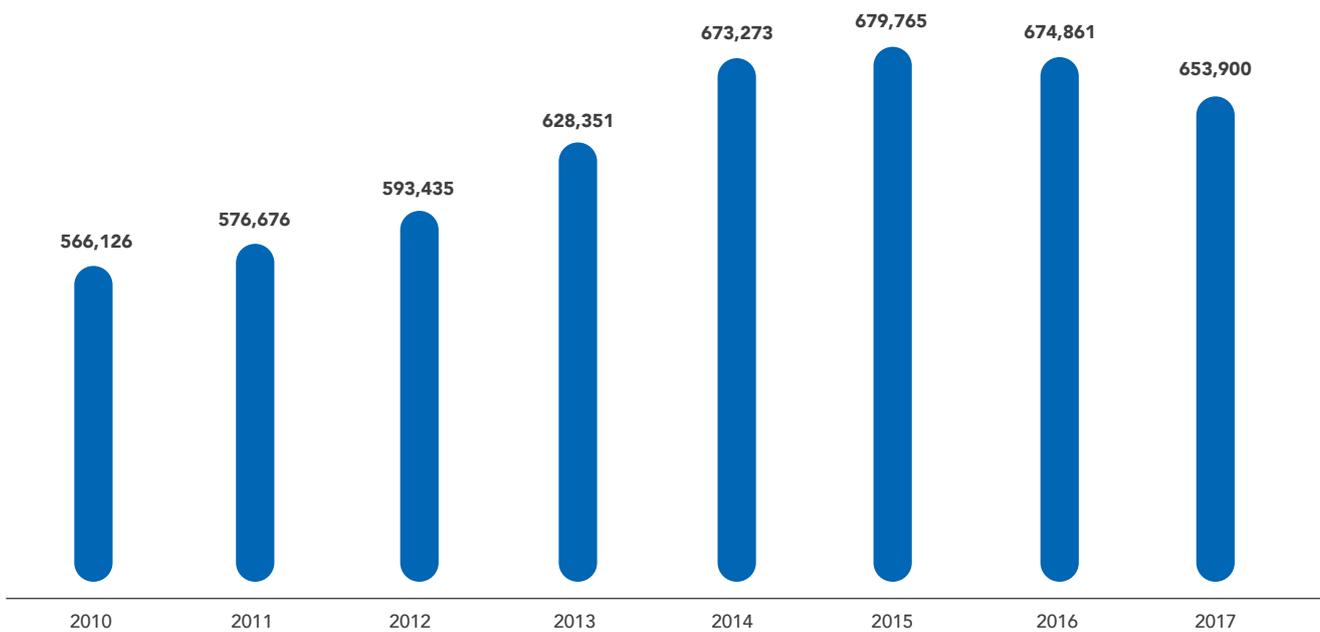


Fonte: IBGE, "Conta-Satélite de Saúde: Brasil 2010-2017" (gasto em saúde) e Bacen (crescimento do PIB).

Comparing the health expenditures as a percentage of GDP in the international marketplace in 2017, Brazil spent a greater share than the average of OECD countries, which was 9.2% and 8.8%, respectively. However, in countries with more aged citizens than Brazil, such as Switzerland (12.4%), Germany and France (both with 11.3%) the healthcare share over GDP was higher than in Brazil, whereas countries such as South Korea (7.6%) and Mexico (5.5%) spent smaller shares in the same year. It is also important to consider the health

expenditures and the actual performance throughout the same period (Graph 3)³. Between 2010 and 2015, total health expenditures in Brazil increased from R\$566 billion to R\$679 billion, considering the currency in 2019, amounting to actual growth of 3.7% per year in the period. However, because of the crisis started in 2014, actual health expenditures reduced from R\$679 billion to R\$654 billion between 2015 and 2017, translating into annual reduction of 1.9% per year during this two-year period.

GRAPH 3 | Total health expenditures in Brazil (2019 million R\$) | 2010-2017



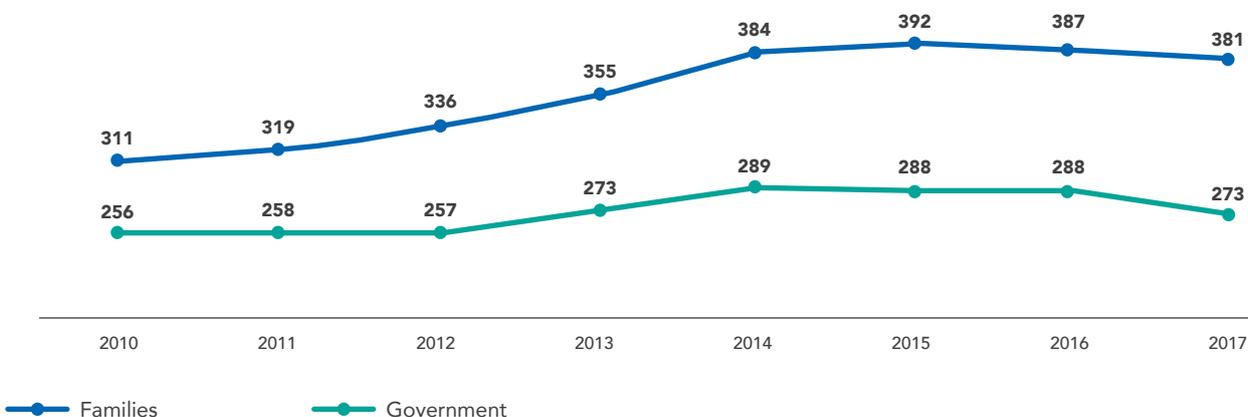
Source: IBGE, Conta-Satelite da Saude Brasil 2010-2017. Data were expressed in Brazilian Real considering 2019 average, corrected by GDP implicit deflator.

Government expenditures in health, comprising federal, state, and municipal levels, increased from R\$256 billion to R\$289 billion between 2010 and 2014, with actual annual growth of 3.1% in the period. However,

as of 2014, the recession hit hard and governmental health expenditures reduced to annual average of 1.9% between 2014 and 2017, reaching R\$273 billion in 2017 (Graph 4).

³Original data of health expenditures from CSS 2010-2017 by IBGE are shown in current nominal values. To calculate actual values, we corrected the nominal data by GDP implicit deflator, adjusting nominal series to average prices in 2019.

GRAPH 4 | Health expenditures of families and the government in Brazil (2019 billion R\$) | 2010-2017



Source: IBGE, Conta-Satelite da Saude Brasil 2010-2017. Data were expressed in billion Brazilian Real considering 2019 average, corrected by GDP implicit deflator.

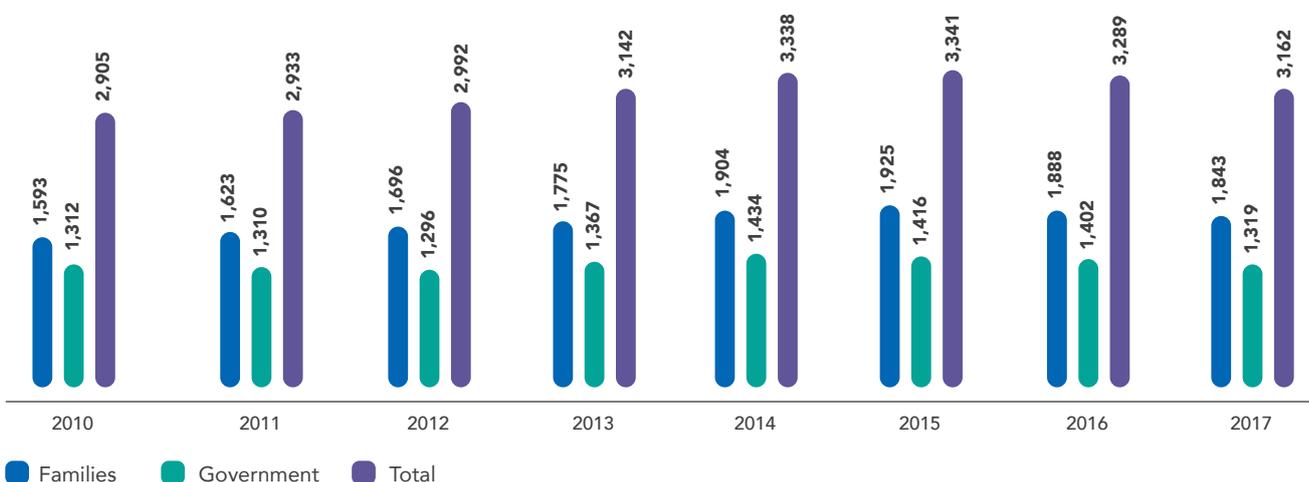
Conversely, family expenditures on health (direct and institutional, including not-for-profit organizations that work for families) increased from R\$311 billion to R\$392 billion between 2010 and 2015, with average growth rate of 4.7%. However, they were also impacted by the economic crisis of 2014, leading to annual reduction of 14% between 2015 and 2017, reaching R\$381 billion.

The reduction in formal jobs, resulting in shrinking numbers of healthcare plan beneficiaries, may

explain part of the reduction in family expenditures on health, which failed to pay insurance premiums, but in turn had to increase direct out-of-pocket expenditures, by purchasing medications and medical-hospital services outside the coverage provided by healthcare plans.

As Brazilian population has increased in this period, we can say that the reduction of per capita health expenditures has been even more substantial (Graph 5).

GRAPH 5 | Per capital annual health expenditures in Brazil of families, the government and as a total (2019 R\$) | 2010-2017



Source: IBGE, Conta-Satelite da Saude Brasil 2010-2017. Data were expressed in Brazilian Real considering 2019 average, corrected by GDP implicit deflator.

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COVID-19 pandemic has brought evidence of the already existing significant decrease in industrial production, revealing the worst monthly performance since March 2002”

Between 2010 and 2015, total annual expenses per capita increased from R\$2,905 to R\$3,341, representing annual growth of 2.8%, following decrease to R\$3,162 in 2017 and annual decline of 2.7% between 2015 and 2017. Concerning per capita annual expenses of families, there was increase from R\$1,593 to R\$1,925 between 2010 and 2015 (3.9% per year) and decline to R\$1,843 in 2017. As to government expenses (including municipal, state, and federal levels), the increase observed between 2010 and 2014 was practically compensated by losses incurred between 2014 and 2017 due to recession.

This movement of decreased expenses in healthcare may have been enhanced by different reasons since 2017. Concerning public expenses, the reforms that intended to control the increase in public sector expenses (such as pensions, payroll, charges, etc.) did not produce short-term impacts. Moreover, Constitutional Amendment 95 of 2016 set a cap for controlling public expenses for the upcoming years. Consequently, the government had to resort to non-recurring expenses sources.

The crisis brought about in 2020 due to COVID-19 pandemic has already pointed to vertiginous falls recorded in industrial production (-3.8% in the first

quarter of 2020 over the same period the previous years), indicating the worst monthly performance (-9.1%) since March 2002. In April 2020, the International Monetary Fund (IMF) estimated 5.3% GDP shrinkage and unemployment rates reaching 14.7% in the end of the year. Thus, the sharp decrease in tax collection will define even tougher limits for public expenses. Conversely, there is the ongoing increase in emergency expenses in healthcare as a response to the urgent needs of the pandemic, required to reduce mortality. The combined effects of these two contradicting trends on the behavior of government expenditures in healthcare are still unknown.

Concerning family expenditures on healthcare, there has been a decrease in number of healthcare plan beneficiaries (about 3 million between 2014 and 2020), increasing the money allocated to healthcare and paid out directly from the family budget. It is estimated that in 2020, as a result of the employment rate plummet and reduced income among informal workers, out-of-pocket expenses of families will similarly drop, a trend that has been already shown by [Graph 5](#) for years 2015 and 2017, and has probably extended into the two following years.

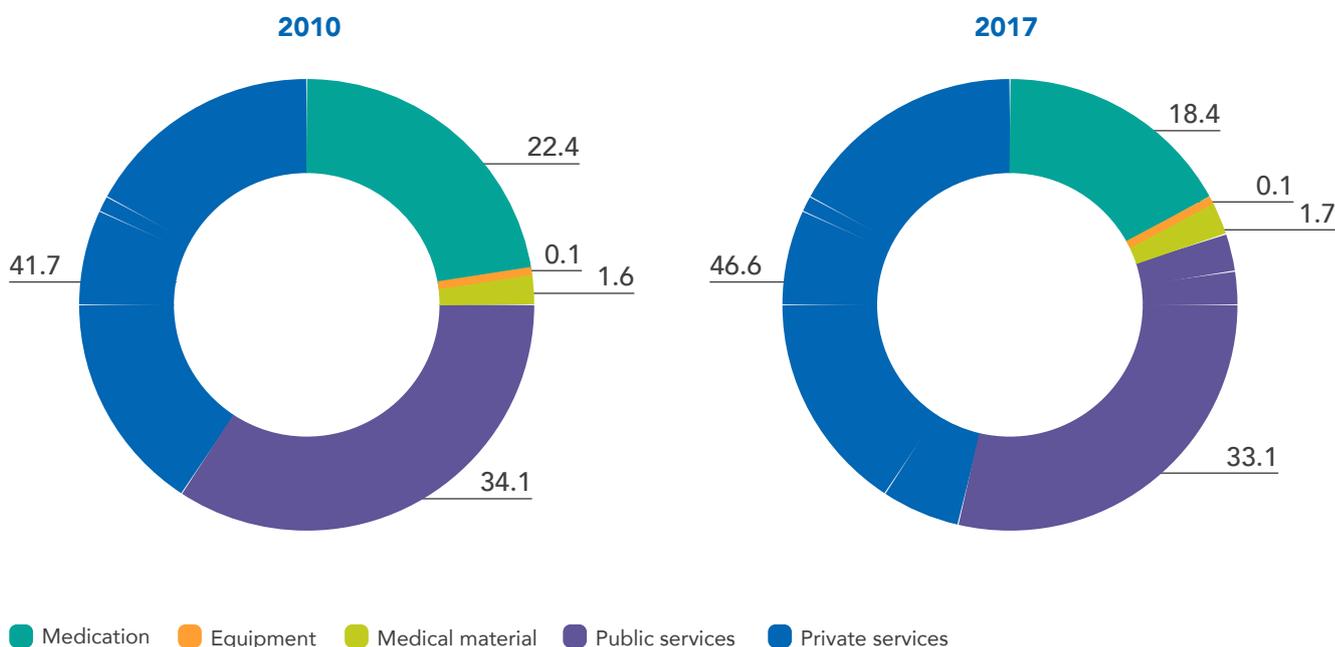
Where does health expenditure go to in Brazil?

In this section we will analyze the distribution and the variation of health expenditures between 2010 and 2017, according to specific expenditures categories in the industry⁴, such as medication⁵ equipment⁶, medical suppliers⁷, public services⁸ and private healthcare services⁹.

The economic crisis started in 2014 has modified the breakout of expenditures and relative prices of some items in the health expenditure list (Graph 6). We can observe that health expenditures from private

healthcare services have always responded for the highest share in sector expenses, but it increased its weight from 42% to 47% between 2010 to 2017, whereas the weight of other categories, such as medications, have experienced significant decrease, from 22% to 18% in the same period. Expenditures on public health services slightly reduced this share from 34% to 33%, whereas equipment¹⁰ and medical supplies have practically maintained the same share over total health expenditures.

GRAPH 6 | Distribution of total health expenditures in Brazil by category (%) | 2010 and 2017



Source: IBGE, Conta-Satelite da Saude Brasil 2010-2017.

⁴ A detailed list of product codes and selected health economic activities, with their descriptions, may be found at: IBGE. "Conta-Satélite de Saúde: Brasil: 2010-2017 – Notas técnicas". In: Contas Nacionais. Rio de Janeiro, n. 71, p. 11-15, dez. 2019. Available on: <https://biblioteca.ibge.gov.br/visualizacao/livros/liv101690_notas_tecnicas.pdf>; accessed on 05/05/2020.

⁵ It includes government, families and institutional expenses on active ingredients, human use medications, pharmaceutical preparations sold through wholesalers and retailers for human pharmaceutical products.

⁶ It includes government and families' expenditures on medical and dental devices and instruments, including wholesale and retail operations of instruments and materials for medical, surgical, orthopedic, and dental use.

⁷ It includes government, families' and institutional expenditures with other materials for medical, dental, and optical use, including prostheses, and also wholesale and retail applications of these products.

⁸ It includes government expenditures on healthcare services provided to public entities.

⁹ It includes government and families' expenditures with insurance, healthcare plans and services provided by private and non-governmental entities.

¹⁰ It includes only depreciation, as resources invested in equipment tend to be accounted as fixed capital and cannot be considered consumption expenses.



Considering data from 2017, private healthcare expenditures in Brazil amounted to 4.2% over GDP, whereas public services amounted to 3.1% of GDP. Medications responded for 1.7% of GDP and medical supplies and equipment amounted to only 0.2% of GDP.

Another way to see how expenditures are distributed is by observing the economic agent that makes the consumption. In 2017, out of total families' health expenditures, 68% were with private services, 29% with medication and the remaining amount with medical materials and equipment depreciation. However, in case of government expenditures, it is observed that most of the total (79%) was spent on public health services and the remaining on private services (17%) and medications (4%).

Even though these proportions had not been substantially modified in 2018 and 2019, it is possible that

they will undergo structural changes as of 2020, when additional expenditures will be required to fight against COVID-19 pandemic. A higher share of government expenditures should be directed to public services, such as for purchasing medication and equipment and investing in intensive care beds, indicating potential changes to future expenses distribution.

It is important to understand how health expenditures are distributed between intermediate and final consumption. In 2017, most of the expenditures were made for final consumption. However, when considering the expenditures with medications, we can observe 79% of it dedicated to final consumption of families (73%) and government (6%) and that out of 21% of intermediate consumption, 13% was directed to private healthcare, 6% to public health services and 2% to other activities.

Gross Value Added (GVA) and jobs generated by health

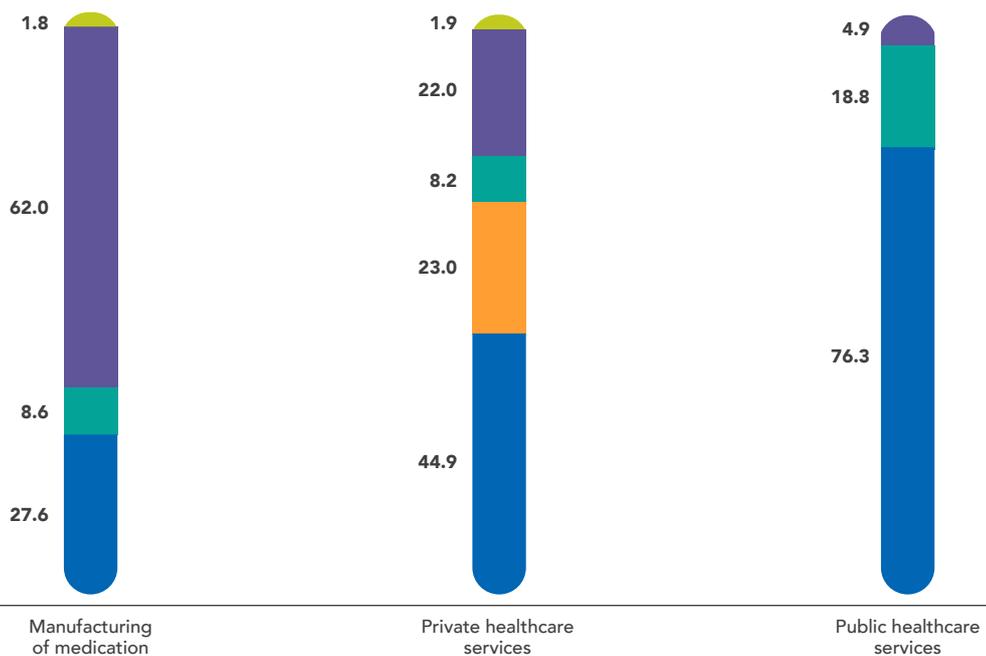
Health Satellite Account (CSS) 2010-2017 has also assessed the contribution of healthcare on the formation of the national gross value added (GVA), an indicator that measures income generation and compensations of different economic activities, both isolated and aggregated. Between 2010 and 2017, the share of health services in the national GVA increased from 6.1% to 7.6%, highlighting the share of private and public services, which went respectively from 2.1% to 2.9% and from 2% to 2.3% of national gross value added throughout the period.

The GVA generated by healthcare is also used to promote information related to different compensation practices in the industry. The proportion of received compensations vary according to the specific activity. To exemplify, **Graph 7** shows how GVA generated in 2017 was distributed in manufacturing pharmaceutical products, production of private services and provision of public health services.



Between 2010 and 2017, healthcare share in national Gross Value Added increased from 6.1% to 7.6%, including increased share of private and public services”

GRAPH 7 | Distribution of GVA in health activities selected by type of compensation (%) | 2017



■ Salaries
 ■ Income of independent workers
 ■ Social charges
 ■ Gross operating surplus
 ■ Tax minus incentives

Source: IBGE, Conta-Satelite da Saude Brasil 2010-2017.

Data show that salaries amount to 28% of GVA in pharmaceutical production, 45% in private services and 76% in public health services. However, in private healthcare services, compensation of physicians is, on average, received as provision of independent services. Thus, if we add up the salaries paid in private healthcare services to the payments made to self-employed professionals (23%), the percentage of reached GVA would be close to the amount paid as salaries in the public healthcare service.

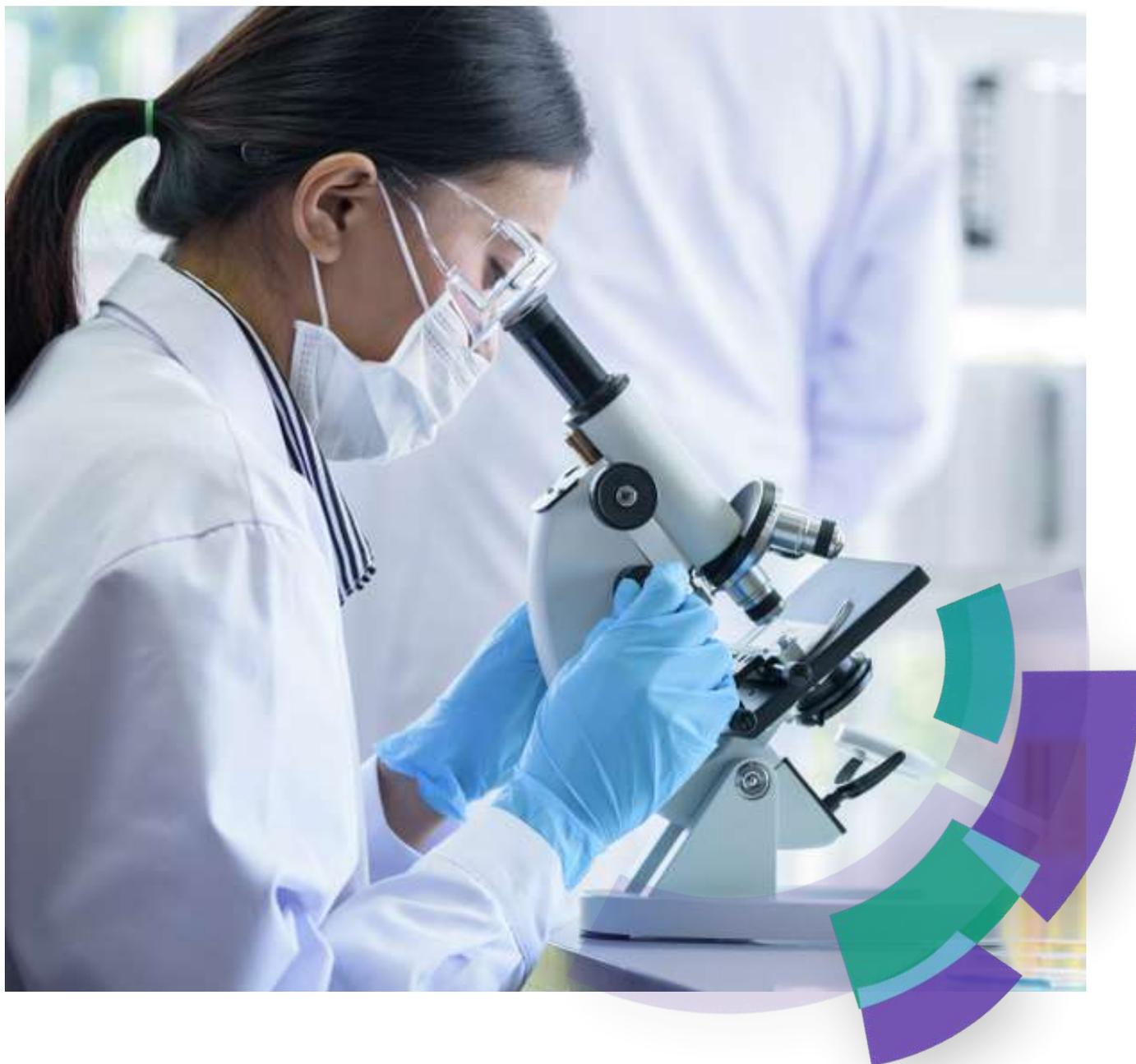
It is important to highlight that gross operating surplus, which includes income over invested capital and asset depreciation (and not only the net profit of the activity), is the highest share of GVA in manufacturing of pharmaceutical products (62%). In public healthcare services, the low weight of gross operating surplus amounts to asset depreciation in the industry.

In addition, healthcare is a major generator of jobs. In 2010, out of 98 million people working, 5.2 million said they worked in healthcare activities. In 2017, the number of jobs in health activities went up to 7.3 million out of 102 million employed people in Brazil. Therefore, the share of healthcare jobs on the total Brazilian workforce went up from 5.3% to 7.2% throughout the analyzed period (**Table 1**).

Data show that healthcare jobs experienced 39% growth compared to less than 2% of the remaining business activities of Brazilian economy during 2010-2017, indicating that healthcare is more dynamic in generating jobs than other industries, even during a period of economic recession. It may be due to many factors, including demographics (increase in elderly population) and the expansion of health coverage.

TABLE 1 | Occupations in healthcare industry in Brazil | 2010-2017

ACTIVITIES	Number of employed people		Growth rate
	2010	2017	(%)
Healthcare-related activities	5,228,775	7,260,572	38.8
Manufacturing of pharmaceutical products	90,675	88,894	-2.0
Manufacturing of medical, dental, and optical instruments and materials	59,979	68,995	15.0
Pharmaceutical, toiletries and medical-dental product trade	1,027,451	1,267,122	23.4
Private healthcare services	2,294,668	3,353,906	46.1
Public healthcare services	1,562,737	2,147,269	37.4
Public health, education, and defense activities	193,265	334,386	73.0
Other activities	92,887,443	94,356,445	1.6



Even though there has been a minor decrease in jobs in the pharmaceutical manufacturing industry (-2%), due to increase in industry consolidation and its dependence on exports of medications, other health industrial businesses, such as medical supplies, dental and optical material manufacturing experienced 15% expansion.

The activities that generated the greatest increase in health jobs were public health, education, and defense (73%), private (46%) and public (37%) services. The two latter activities represent 75% of the total number of jobs in health in 2017, and private health services were

the main hiring entities in the long period between 2010-2017.

It is also important to highlight that assets and supplies production in healthcare has little impact on Brazilian trade balance, amounting to only 0.7% of the total exported by the country in 2017. However, imports have a significant weight in the industry dynamics, especially from active ingredients used in medication manufacturing, medications and medical supplies, dental and optical materials, and 76%, 24% and 33% of the goods consumed in the country in 2017, respectively, amount to imported products.



Economic relevance of health industry for the pandemic

Healthcare is absolutely necessary in any society, but in pandemic times everyone tends to value even more its relevance and significance. Without a strategy and resources to face the challenges related to control and treat the affected people, social and economic impacts of the pandemic would reach huge proportions, as experiences from the past and the new coronavirus crisis have taught us.

Many authors estimate that the black death from the 14th century killed between 40% and 60% of European population not only due to mortality, but also because of waves of famish that followed it, negatively affecting the supply, demand, product prices and the income of the population. Similarly, historical analyses have discovered an increase in production of candles, coffins, herbs, potions and services of physicians, barbers, and surgeons. A similar effect was observed during the Spanish flu, in the beginning of the 20th century, which killed about 50 million people in the world between 1918 and 1919, leaving behind equally strong impacts over the already beaten economy post First World War. The current COVID-19 pandemic has already brought along strong recession in the first quarter and it will lead to significant reductions in GDP in 2020, and possibly in 2021.

Even if this massive pandemic leads to economic collapse, the reaction to the health crisis needs supplies, such as personal protective items, laboratory tests, medical equipment, medications, general supplies, reagents and many other items that still put on the move many industry sectors, including the areas of research of new medications and vaccines.

During the current pandemic, many countries, Brazil included, have proven to be unprepared to meet the domestic offer of goods and services and had to fight for imported products and supplies such as tests, mechanical ventilators, personal protective gear, reagents and other essential items to face the pandemic. Families have also struggled with the shortage of items, such as food, cleaning products, personal protective gear and other goods that were gone from the shelves of regular selling points in large cities. Facing international competition for importing these items was another major challenge, dealing with outrageous prices and expenses much above those expected to be made should there had been a well-organized supply and demand system between internal and external markets.

Therefore, in a period of pandemic crisis, it is expected to see the increase in relevance of the health industry to economy. First of all, because it is the only sector that can lead a strategy to reduce infections, guide the population, companies and social sectors on how to be protected, provide management options to mild, moderate and severe cases by implementing therapies, clinical protocols and solutions only found in hospitals. Moreover, it is the only sector capable of running studies and discovering new effective medications, therapies, and vaccines.

Being prepared to a pandemic crisis is having strategies to the domestic production and to industrial conversion, so as to avoid consumption bottlenecks and utilization of assets and services essential for this time of pandemic, including preparedness actions and quick conversion of the workforce. As we have seen for the past months, though, Brazil and most countries have had great difficulties in preventing the contamination process and providing quick solutions of treatment to avoid the collapse of healthcare system due to the overuse of intensive care beds and mechanical ventilators required to treat severe cases of acute respiratory conditions as those brought by COVID-19.

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Being prepared to a pandemic crisis requires strategies to domestic production and to industrial conversion”

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ARTICLE

Anahp Outcomes Program:

building the
benchmarking
of congestive
heart failure

Anahp's pioneer
initiative to deliver
value to patients





In most countries, the cost of healthcare has been increasing above the Gross Domestic Product (GDP), which is an unsustainable situation in the long run to any society, regardless of the coverage model adopted by it. In Brazil, the total annual health expenditure is about 9% of GDP and one essential issue concerns the quality resulting from such expense. The concept of value-based healthcare - VBHC analyzes the amount of resources used and the clinical benefits obtained from it for a certain population, within a certain period of time. Ultimately,

the key purpose of this practice is to generate the greatest value, that is, obtain the best clinical possible outcomes, under the patient's and/or user's perspective, using the least amount of resources necessary to reach the best clinical results. In other words, the best relation between clinical outcomes and expenses. It may also be interpreted as improvement in quality of care.

The mission of ICHOM - International Consortium for Health Outcomes Measurement is to promote value-based healthcare to patients, offering a standardized

measurement methodology of clinical outcomes, developing and providing for free standard sets for each pathology/ health condition.

In 2017, eight Anahp member hospitals voluntarily decided to kickstart a pioneer initiative in Brazil: the simultaneous implementation of standardized clinical outcomes measures. The first implemented standard set focused heart failure (HF) and the main purpose of the group, in addition to learning, was to exchange experience among participating organizations to improve value delivery.



Increased engagement
of clinical staff when
patient-reported outcomes
are presented



Organizations can
compare specific indicators
for each disease



Identification and
modification of gaps in
institutional clinical protocols



Provided the change
of flow for patients coming
to the hospital



Supported the need
to create a specialized
outpatient center



Enhanced patient loyalty
as they feel the hospital
cares for them

The key objective of the program was to measure clinical outcomes that matter to patients in a standardized fashion, according to ICHOM methodology, simultaneously, at Anahp member hospitals. At the same time, it provided opportunities for benchmarking and for improving clinical practice and reduction of waste. It tested the practical feasibility of delivering value to patients and to systems. ICHOM standard sets contain data on demographics, clinical aspect, management and complications, and clinical outcomes such as mortality and readmissions. It also contains patient reported outcome measures, or Proms, through the application of standardized and validated questionnaires concerning reliability and reproducibility of results.

Anahp Outcome Program consists of supporting member hospitals in implementing the standard sets, measuring and benchmarking them. Upon organizing the program, two governance bodies were created for the participating hospitals: a managing committee, responsible for providing strategic guidance to the program, and an executive committee, which addressed technical operational matters that occurred during the conduction of the implementation. The Committees still hold periodic meetings.

The hospitals have followed the classic methodology prescribed by ICHOM, which included gap analysis, process mapping, pilot planning, simulation with fake patients, pilot test and scale up phases (large scale

implementation). Moreover, Anahp has used the project management methodology to support hospitals during the different phases of the program.

For benchmarking purposes, a set of specific functionalities have been developed for platform program SINHA. All participating organizations can use these functionalities and they can also customize their own dashboard with data and indicators that they consider to be relevant to the hospital.

It is worth mentioning the dimension of benchmarking at Anahp Outcome Program: it goes beyond measurement and comparison of outcome indicators. Participating hospitals have the opportunity to get to know on site how other organizations are getting ready to measure outcomes and how these results impact and/or trigger process changes, focusing on improving the patient journey.

The implementation project of the first standard set for heart failure at Anahp has become a case study for international reference: it was one of the first successful initiatives to simultaneously implement the same standard set at different organization in different regions of the country. In addition, the developed benchmarking tool has been considered for some international initiatives. One of the goals of Anahp program for 2020 is to expand the use of the benchmarking tool to organizations outside Brazil.

As it is a unique project in its community-based nature, both in Brazil and in ICHOM's experience

in the world, we can state that the implementation has been a great success.

We highlight some important points of the program: collaboration among hospitals, exchange of experience, openness to visit other organizations, agility in making changes and continuous improvement cycles of the project, which provides the chance to refine the methodology. Members of the managing and the executive committees have been highly collaborative,

both in decision making and in discussing especially complex topics, such as for example data privacy, results sharing, and the progression with the other standard sets, among others.

The program has evolved and in 2020 it gathers a group of twenty participating hospitals. In addition, other standard sets have been included, such as the protocol for stroke and hip and knee osteoarthritis. Thus, there are three implemented standard sets and Anahp has been

measuring their development and compliance, benchmarking with participants. Considering the period between January 2017 and February 2020, about 2,500 patients were followed up using the three standard sets and over 8,000 records were reviewed, including clinical, operational, and quality of life data.

Still in 2020, Anahp will start to develop and monitor standard sets of sepsis, patient experience, and a cancer-related affection (being defined by the participating group).

2020

- At least 25 and maximum 30 participating organizations.
- Publication of a scientific paper and/or case study by Anahp.
- Expansion of line of care being monitored by ICHOM standard set (two new standard sets).
- Launch of Anahp standard set for patient experience.
- Report of the outcome program of congestive heart failure (CHF) and stroke - only for member organizations.
- Implementation of an audit model for Anahp Outcome Program.
- Sharing of data and individualized indicators among member hospitals.

2021

- At least 35 and maximum 40 participating organizations.
- Expansion of ICHOM standard sets (three new standards, reaching a total number of eight or nine sets simultaneously implemented).
- Project development in partnership with payers and employers.
- Foster VBHC community in Latin America, taking a key role in the process.
- Partnership with ICHOM to promote the VBHC community in Latin America.
- Expansion of Anahp platform for international benchmarking.
- Dissemination of data and individualized indicators to non-member associations.

ARTICLE

Brazil Health 2030:

A new look
at the Brazilian
health system





In 2019, when the Scientific Committee of the 2020 edition of the National Congress of Private Hospitals (Conahp) and Anahp's Board of Directors defined the theme that would guide the discussions of the entity along the year and which would culminate in the main event, in November – the congress –, we could not imagine the challenges that health systems all over the world would be living with the new COVID-19 pandemic. In four months, more than four million people have been contaminated by COVID-19, with more than 270,000 deaths (on 11/May/2020) and an unprecedented transmission capacity. In very short time, the new COVID-19 has overpowered global health structures, exposing

our frailties and incapacity to cope with such powerful enemy.

In face of this new world scenario, and understanding Anahp's organizational role – of bringing out key and structural issues that contribute to the discussion and improvement of a health system that meets the needs of the population –, we chose to still hold the congress, despite the uncertain scenario regarding the pandemic evolution, but in a new format, with a new purpose and totally digital, suited to the times we are living.

We believe that, as Brazil and the world recover after months of crisis, Conahp may be the ideal environment to discuss the resumption of the activities of Brazil's health industry, serving as a

forum to share the learnings of these dreadful months of intense fight against one of the worst pandemics the world ever experienced, certain that we must adapt to the new normal.

As we defined the themes for Conahp 2020, new reasons and priorities for the debates imposed themselves, because of the pandemic. The theme remains pertinent, for sure, but the backdrop for the discussions is denser, more profound and challenging.

Still considering addressing the main themes from the perspectives of care delivery, people and sustainability, we would like to share briefly and concisely what we expect from each of these axes based on the new context.

Care delivery perspective

COVID-19 does not distinguish the between care delivery maturity and response capacity of different health systems. Major global powers, with high per capita investment in health, were as affected or even more affected than the countries with smaller infrastructure and response capacity.

However, it is possible to observe that public health policies are being decisive in the process of dealing with COVID-19. We see countries that, despite the increasing number of cases, did not collapse and, regardless of all difficulties, are managing to provide the care patients need. Some important successful examples in that regard are Germany, Portugal, Australia, New Zealand, and others.

In this axis of discussion, we would like to understand how different countries integrated patient-centered work models, in the flow and continuity of care, taking into consideration features such as population aging, chronic conditions, system access and integration.

In addition to that, our objective is to deepen the look at care delivery models that have demonstrated adaptation capacity, especially at crisis times such as this, resorting to actions that helped in crisis management and operational capacity, like telemedicine and other technological innovations that were at different stages of maturity around the globe and which were, all of sudden, widely demanded.

We have witnessed in these times unprecedented disruptive actions in the health industry, like using the drive-thru system, wide scale laboratory testing, use of drones, and prediction algorithms. From now on, we will probably live with many of those initiatives. Few times – and probably never with such intensity – have our health systems been so stressed regarding the need to demonstrate efficiency, agility, and adaptation. We should identify and incorporate the best strategies used in the pandemic.



People perspective

One of the most distressing aspects of the new COVID-19 pandemic has been to see the suffering and exhaustion of healthcare workers, especially in countries with more tragic results like Italy, the USA, Spain, etc.

About 14% of the work force of those countries have fallen ill, and the feeling of “incapacity” to save lives due to shortage of equipment, beds and other structural issues, having to make painful and highly questionable ethical-utilitarian decisions, will certainly be one of the main consequences to be dealt with after the pandemic: burnout will be inevitable.

If in the past we had to study the theme of well-being and mental health of healthcare workers, besides the issues of the chronic underinvestment in education, recognition and availability of these practitioners, the pandemic has raised this theme to the level of top priority in the agenda of Conahp 2020.

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Sustainability perspective

The emergence of the new COVID-19 has caught everyone by surprise. The unknown disease, at first was neglected by most Western nations. In a few weeks, however, is rapidly spread through the five continents, scaring the society and healthcare workers with its easy contagion and lethality, especially among older adults and patients considered as risk groups.

The already overloaded, costly and often undersized and underfunded health system was subjected to revenue loss and excessive cost burden caused by the complex treatment of patients victims of COVID-19, illustrated in the inconceivable and unprecedented increase in the need for equipment and supplies, and recruiting and turnover of healthcare workers.

In this scenario of fear and instability, country governments have laid out on the table their

weapons to try to avoid a collapse in the economy, proposing loss mitigation and fostering measures before unimaginable. The economy debacle closes the vicious cycle, overloading even more health systems. However, as the pandemic risks were initially undervalued, the conclusion that it was essential to unite forces of the entire society to tackle the outbreak took a while to become a consensus among countries.

The first wave of measures to fight COVID-19 was timid on the side of public health and economy. Behaviors started to change when numbers evidenced the size of the potential damage. Public health authorities all over the world started to lock down more slowly than the necessary to curb mass contagion and to avoid more consistent damages to the economy.

We certainly do not yet know for sure how much the global Gross Domestic Product (GDP) has fallen, neither the socio-economic consequences of the COVID-19 pandemic, and probably only historical distance will enable us to assess the global impact of damages.

After COVID-19, our challenge will be to discuss the sustainability from the financial, environmental, and social standpoints. How to raise the country back after so much damage? How to assure the sustainability and functioning of our health system, debilitated in every sense after the strenuous combat? Moreover, we do not yet know how long we will have to live with SARS-CoV-2 haunting and burdening our health systems and negatively impacting economic activity.

We should understand better the impact that different recovery scenarios may have in the near future, the new normal, considering aspects like the evolution of herd immunity or a delay in the creation of an effective vaccine. It is highly likely that we may have to deal with outbreak spasms that will overload

the system and/or even transient interruptions in economic recovery, resulting from new surges of infection cases in the population. Unfortunately, this will not be the last global pandemic. How can we prepare for future challenges?

These are some reflections that we would like to bring to Conahp 2020, which will take place on November 17, 18 and 19. The future is uncertain and so far, we can say that the new COVID-19 crisis will mark a novel chapter in the world history. However, we need, more than never, everyone, together, thinking about this scenario into which we have been abruptly thrown in recent months. We need to have the serenity and humility to admit our frailties and weaknesses and to learn from the mistakes we made. And, in that sense, we are sure that the congress, in the new format it is being thought and designed, is the main path for us to join forces and work together to build a new health system, stronger, more integrated and suited to the needs and unique features of our population.



The decision to keep Conahp 2020

Since the pandemic has imposed deep changes to the day-to-day lives of people, companies, and governments, important and difficult decisions had to be made. In Anahp, similarly to many organizations all over the world, we suspended many activities, established a work rotation system for workers and we used technological resources as important allies to keep, in the best way possible, our commitment to our members and the health industry, at a time when speed and the work of the association have become essential.

In spite of the difficult times we are living, one of the most important lessons that the new COVID-19 pandemic has taught us is recognizing that the union between industries and joint efforts make us much stronger and more efficient.

As an entity representing a category that is fundamental for the existence of the health system, hospitals, which are in the epicenter of the distress and difficulties caused by the COVID-19, we think we could not exempt ourselves and simply wait for things to go back to a normal that will never again be the same. We thought and decided, then, that Conahp 2020 should be the recovery and hope event, a possibility for us – Anahp and all stakeholders of the health chain, government and society – to build together

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It will be the recovery and hope event, a possibility for us to build together an environment propitious to rethinking the health system based on this new challenging scenario”

an environment propitious to rethink the health system based on this new challenging scenario.

Before anything, as a good citizen, our entity is committed to safekeeping the health of people, and, with this assumption, the first important change adopted for Conahp 2020 is its format, which will be totally online. It is not possible to know for sure when crowding will be allowed again, therefore we are working with an innovative proposal, that will assure the maintenance of all activities already familiar to our audience, but in a virtual environment. We are seeking what is most innovative in the market to assure the quality of the experience of attendees.

The purpose of Conahp 2020 has also gained a new perspective in this scenario. We would very much like to design this event as a co-creation with all entities that represent this sector, in addition to the government, industry, academia and thinkers who are today close to us in the

fight against the pandemic.

We want Conahp to be the environment for us to find answers and to think about health in our country and in the world.

We also want to expand Conahp’s reach, especially because we will be addressing a theme that has an impact on the lives of all Brazilians. We are studying the best way to enable the free participation of attendees or to charge a symbolic registration fee that will be used to help buy supplies, ventilators and other resources public health organizations need.

We are all – Conahp’s Scientific Committee, Anahp’s Board and the entity’s employees – inspired by the goal of making Conahp 2020 something bigger, with a clear purpose and aware of our responsibility toward the sector and society in the sense of contributing to safety and quality in the delivery of care to the population’s health.

Shall we do it together?





Market and Clinical Profile

Analysis of the private
healthcare market
and clinical and
epidemiological profile of
Anahp member hospitals



Executive Summary

MARKET AND CLINICAL PROFILE

HEALTH CARE ECONOMIC OVERVIEW: CHALLENGES OF THE NEW CORONAVIRUS PANDEMIC

Brazilian economy had been having gradual recovery, with slow GDP increase, but still showing some signs of employment improvement, but **now it should be blown hard by the impacts of the pandemic.**

GENERATION OF FORMAL JOBS BETWEEN 2018 AND 2019 – GROUPS CNAE 2.0 (IBGE)



Hospitals reached **second** among the main job generating industries



1º Non-specialized Retail

60,255



2º Hospital Care Activities

48,082



3º Cargo Road-based Transportation

37,527



4º Administrative and Clerical Services

31,517

Source: Caged | Ministry of Labor.



DECREASE IN NUMBER OF HEALTH PLAN BENEFICIARIES

2016 **47.63** million

2017 **47.09** million

2018 **47.10** million

2019 **47.04** million



UNHEARD-OF DROP IN INTEREST RATE

POOR GDP GROWTH IN THE YEAR



PERSPECTIVES OF ECONOMIC RECESSION 2020 DUE TO THE NEW CORONAVIRUS PANDEMIC

CLINICAL AND EPIDEMIOLOGICAL PROFILE

Define the characteristics of patient population is essential to improve hospital care. To enable profiling, most Anahp member hospitals already have electronic medical records

Source: SINHA/Anahp.

IMPLEMENTED ELECTRONIC MEDICAL PRESCRIPTION

95.56%

IMPLEMENTED ELECTRONIC MEDICAL RECORD

91.11%



PICTURE ARCHIVING AND COMMUNICATION SYSTEM (PACS) IN THE RECORD

85.56%

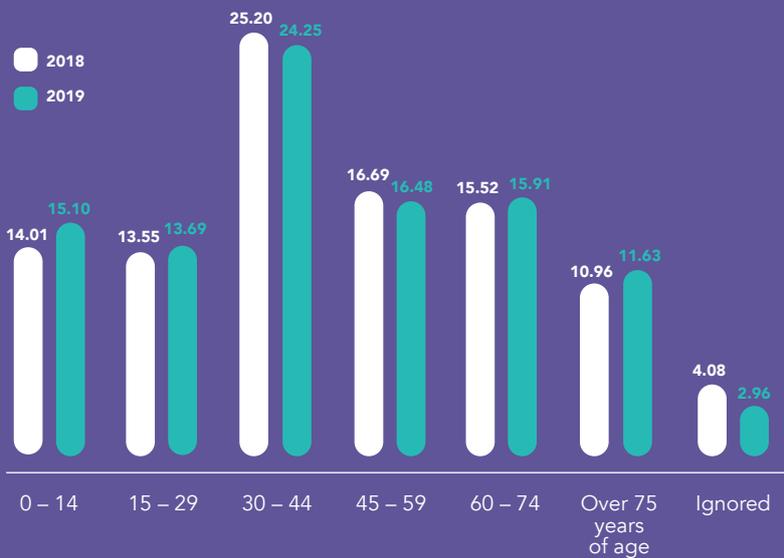
BAR CODE OR RFID

84.44%

BUSINESS INTELLIGENCE (BI)

82.22%

HOSPITAL DISCHARGES BY AGE GROUP (%) – 2018 AND 2019



MEAN LENGTH OF STAY BY AGE GROUP (DAYS)



Source: SINHA/Anahp.

TENDENCY OF CHANGE OF CLINICAL PROFILE

Annual distribution of hospital discharges according to main diagnosis grouped by ICD-10 chapter (%)

RESPIRATORY

7.11 2017 **▶ 10.45** 2019

GENITOURINARY

11.07 2017 **▶ 9.88** 2019

DIGESTIVE

10.18 2017 **▶ 9.31** 2019

CIRCULATORY

9.56 2017 **▶ 8.50** 2019

PREGNANCY

10.54 2017 **▶ 7.13** 2019

NEOPLASM

10.39 2017 **▶ 7.07** 2019

There were

1,891,411 hospital admissions in 2019



Source: SINHA/Anahp.

Private Healthcare Market

The crisis has triggered significant challenges to the Brazilian healthcare system





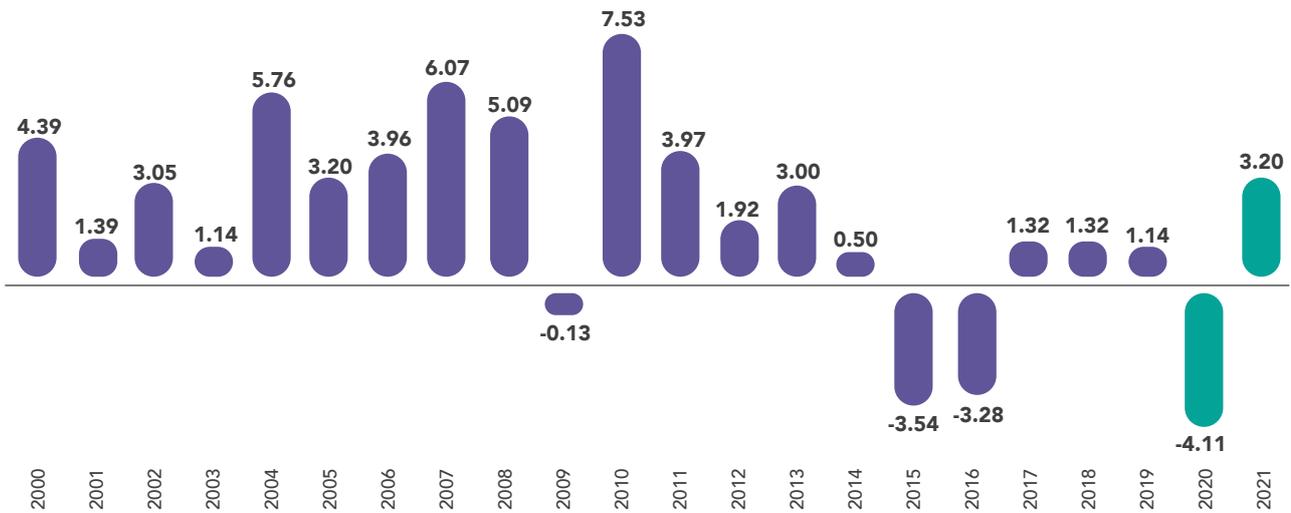
Economic instability, worsened by the new coronavirus pandemic, threatens the system sustainability

Economic situation

Economic indicators have been showing how hard it has been for the Brazilian economy to get recovered. On the one hand, the market has shown slight improvement in formal job creation, including decrease of unemployment rates. On the other hand, Gross Domestic Product (GDP) has had its third consecutive year of poor performance after the period of recession.

In 2019, GDP reached 1.14% increase over 2018, according to data from the Brazilian Institute of Geography and Statistics (IBGE - *Instituto Brasileiro de Geografia e Estatística*). Based on the Report of Mercado Focus, presented by the Brazilian Central Bank, the estimated GDP growth has been reduced for 2020. The first announcement, on January 3rd, expected 2.30% increase, whereas the current data forecast 4.11% drop (shared on May 8th, last announcement before the circulation of our publication), due to the impact of the new coronavirus pandemic. In 2021, the expectation is to have 3.20% increase (**Graph 1**).

GRAPH 1 | GDP variation rate (%) | 2000-2021



Source: IBGE (accessed on 23/Mar2020) and Brazilian Central Bank (Focus Report - 8/May/2020)

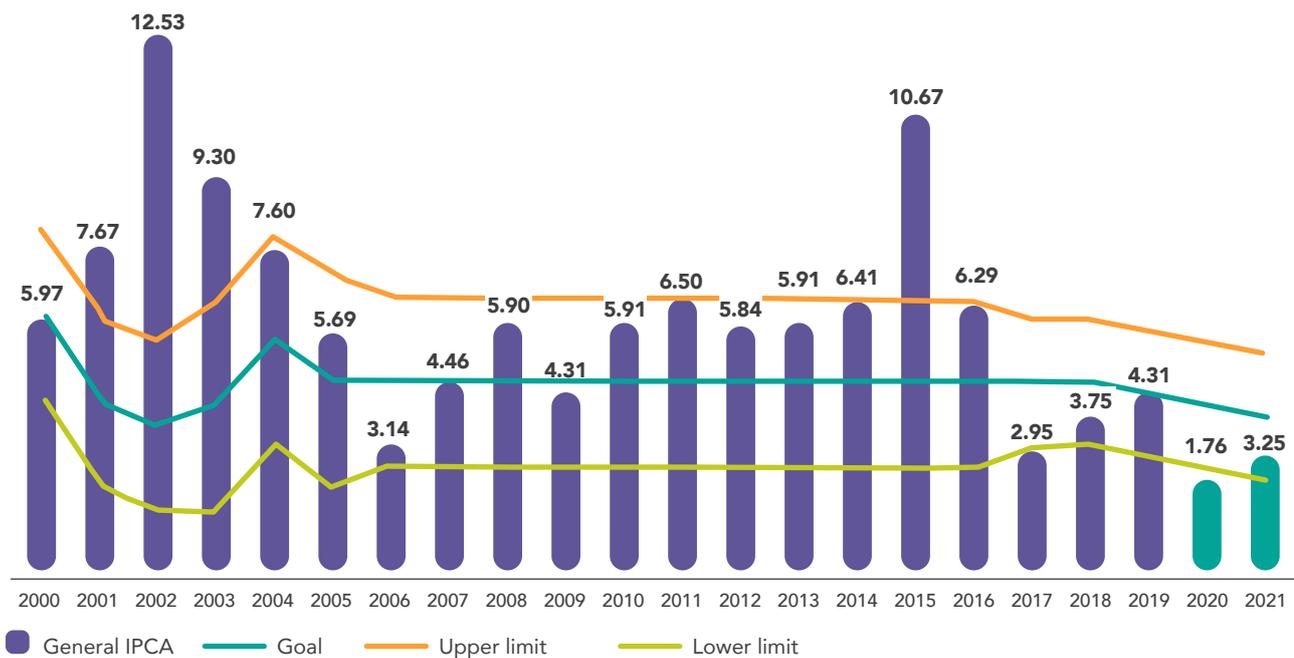
In turn, a World Bank study¹ predicts that Latin American and Caribbean countries will be strongly impacted by the new coronavirus, forecasting 5% drop in Brazilian GDP in 2020 and 1.5% growth only in 2021.

IPCA - National Consumer Price Index - the official inflation indicator in the country - reached 4.31% increase in 2019. The result overcame the numbers from

the previous year, but was close to the goal set by the Brazilian Central Bank, which was 4.25%, including a range of 1.50% variation above or below it.

In 2020 and 2021, prices are expected to drop, and the markets are operating within a range of 1.76% to 3.25%, respectively, according to the estimates of Focus survey (Graph 2).

GRAPH 2 | Annual IPCA variation (%) | 2000-2021



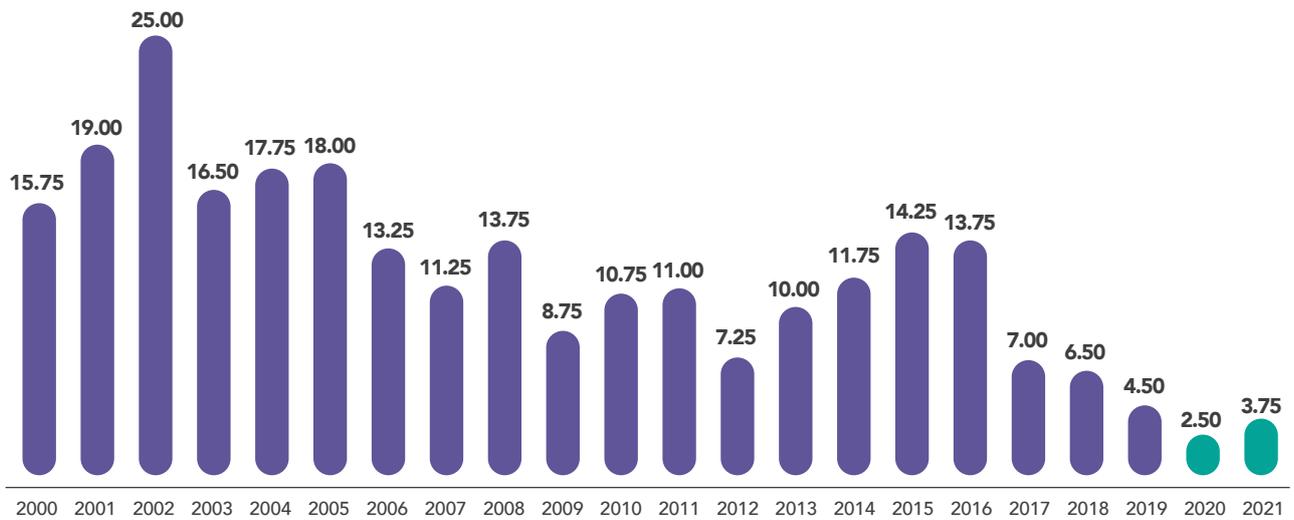
Source: IBGE (accessed on 23/Mar2020) and Brazilian Central Bank (Focus Report - 8/May/2020)

¹ WORLD BANK. Semiannual Report of the Latin America and Caribbean Region. The Economy in the Time of Covid-19. 12 abr. 2020. Available on: <<https://openknowledge.worldbank.org/bitstream/handle/10986/33555/9781464815706.pdf?sequence=5>>; Accessed on 17/Apr/2020.

Controlling inflation rates has enabled reduction of interest rates - the so-called SELIC rate, reaching the lowest rate ever in history at the end of 2019 - 4.50% per year. According to expectations, at the end 2020, Selic will reach even lower levels (2.50% per year), due to economic incentives implemented to face the

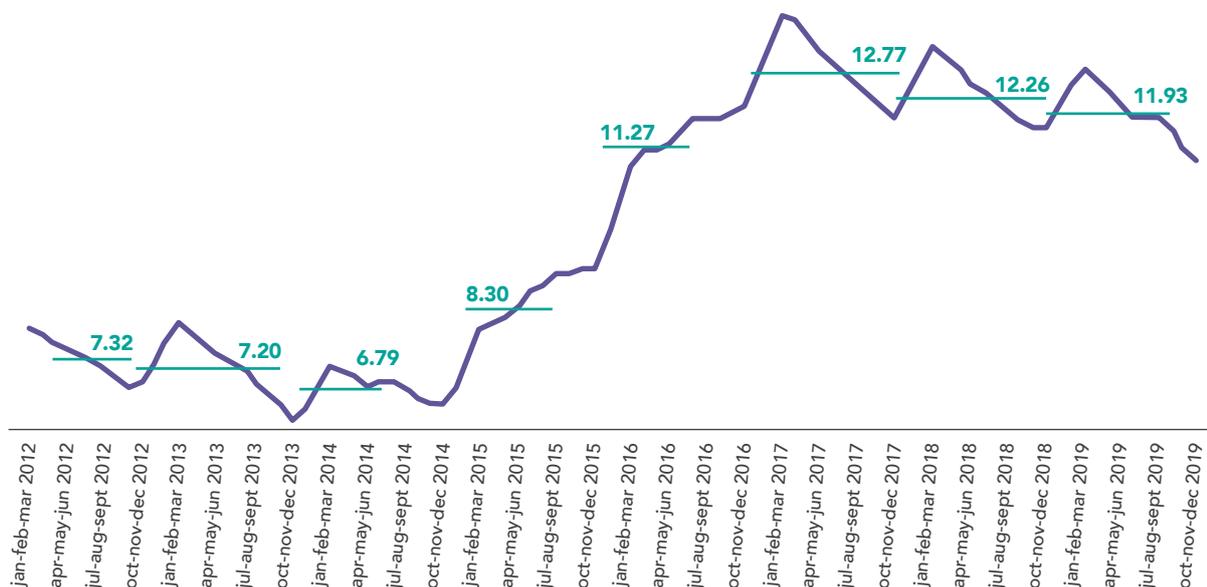
impact of the new coronavirus crisis (**Graph 3**). Unemployment rate, according to the National Household Sample Survey (PNAD), continuously run by IBGE, follows a decreasing trend, having reached 11% in the last quarter of 2019, year average of 11.93%. This is the best result of the past three years (**Graph 4**).

GRAPH 3 | Interest Rate – SELIC goal defined by Copom (%) | 2000-2021



Source: Brazilian Central Bank (accessed on 23/Mar/2020) and Focus Report - 8/May/2020.

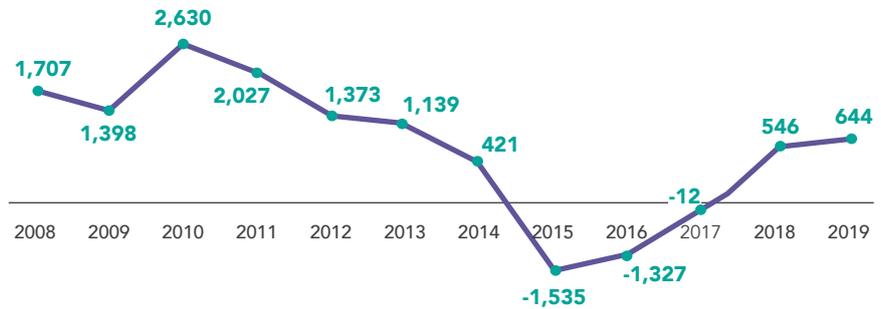
GRAPH 4 | Unemployment rate (%) | 2012-2019



Source: Continuous PNAD/ IBGE (accessed on 23/Mar/2020)

Data from the General Registry of Employed and Unemployed People (Caged), of Ministry of Labor, have also shown better results in generation of job opportunities. In 2019, there were 644,000 new formal jobs against 546,000 in 2018, considering the adjusted series that incorporates information provided at any given time. This is the best result since 2013. **(Graph 5)**

GRAPH 5 | Balance between hiring and dismissal of formal jobs (in thousands) | 2008-2019



Source: Caged/ Ministry of Labor (accessed on 23/March/2020).

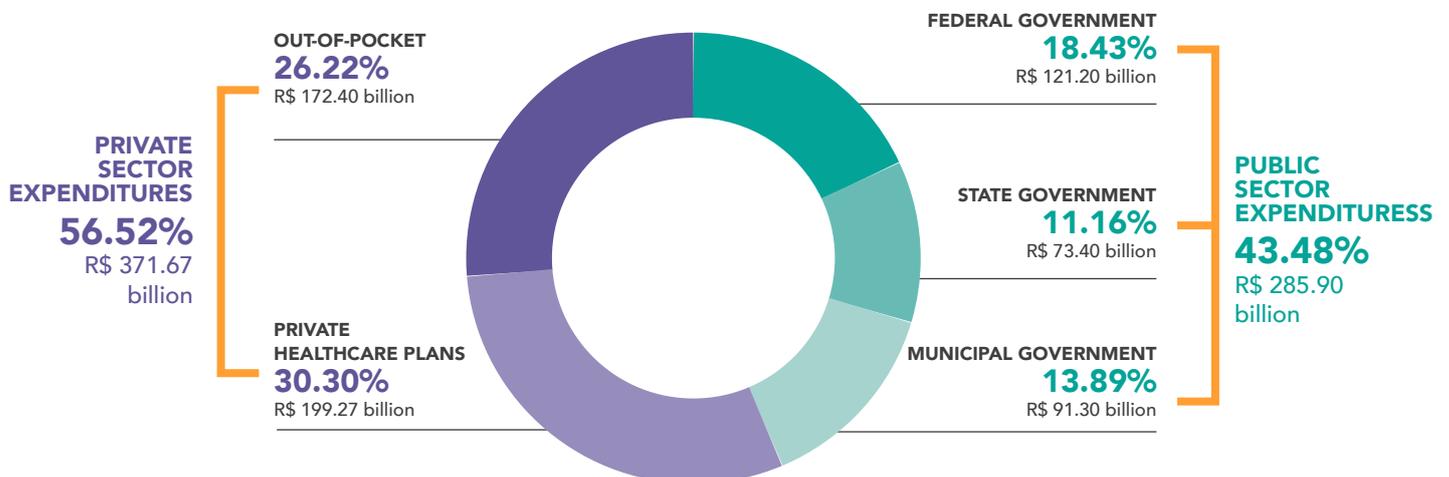
Health sector

Estimates defined by Anahp based on data from the Organization for Economic Cooperation and Development (OECD), National Treasury Agency and Private Healthcare Agency (ANS) indicate that healthcare expenses generated transactions equivalent to 9.06% of Brazilian GDP in 2019, amounting to R\$657.57 billion. Out of the total, R\$285.90 billion were public resources (43.48% of the total) and R\$371.67 billion were private resources (56.52% out of the total).

In 2019, in the public sector, the federal government was expected to spend R\$121.20 billion, state governments R\$73.40 billion and municipal governments R\$91.30 billion.

In the private sector, it is estimated that R\$199.27 billion were spent by families and companies to pay for medical-hospital expenses in 2019 (private health) and out-of-pocket expenses amounted to R\$172.40 billion **(Graph 6)**.

GRAPH 6 | Health expenditures in Brazil (R\$657.57 billion – 9.06% of GDP) | 2019



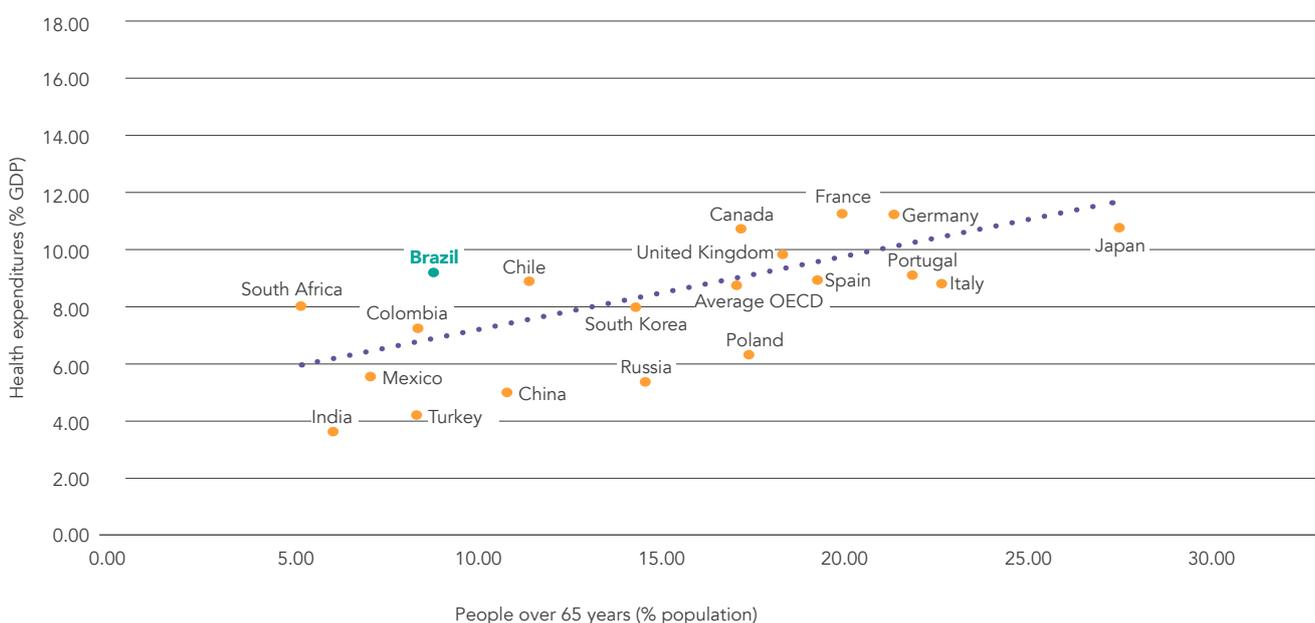
Source: Anahp estimates based on data from OECD, STN and ANS.

Population aging, which increases the demand for health assets and services, plus the economic landscape and behavioral aspects, may explain the percentage spend on health. International comparisons indicate a positive correlation between more elderly people in the population (65 years and older) and health expenditures proportional to GDP (the higher the number of elderly in

the population of a given country, the greater the health expenditures proportional to GDP) (Graph 7).

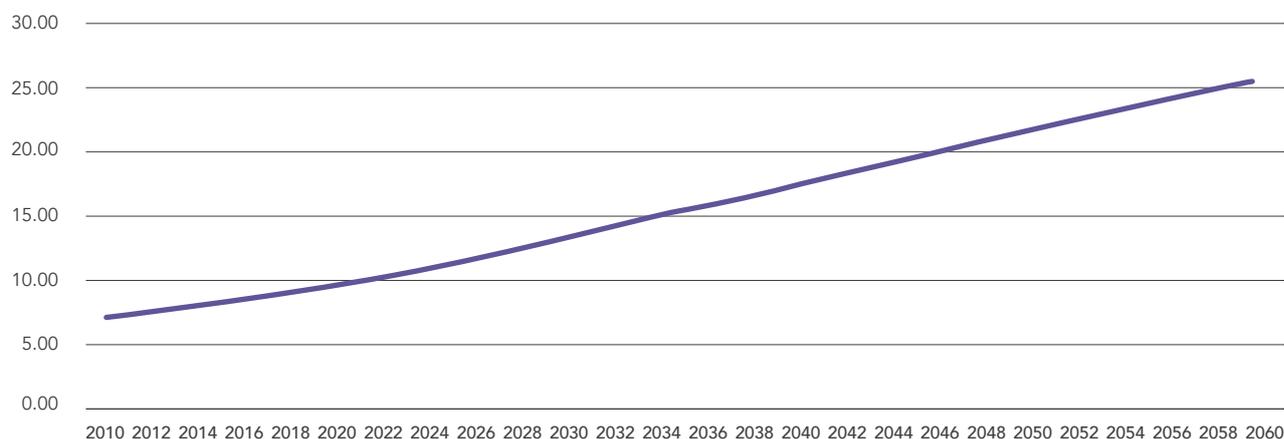
Population projections by IBGE indicate the percentage growth of elderly citizens in Brazilian population - 14% in 2030, 17% in 2040 and 22% in 2050 (Graph 8), reason why health expenditures will keep on increasing in Brazil.

GRAPH 7 | Health expenditures (% of GDP) vs. proportion of elderly (% in the population) – Selected countries | 2018



Source: OECD (accessed on 15/Jan/2020)

GRAPH 8 | People over 65 years in Brazil (% in the population) | 2010-2060



Source: IBGE (accessed on 23/Mar/2020)

A study requested by Anahp, carried out by Compass Consultoria, shows that between 2013 and 2018 the total expenditures in private healthcare in the country reached R\$83.60 billion increase, representing 12.10% growth per year. These figures are translated into 5.40% annual increase in number of events per beneficiary and 6.70% annual increase in unit cost of events. Discounting inflation, the increase rate in costs amount to only 0.70% annually, which shows that increased frequency is the most impactful factor on healthcare plan expenses. Frequency of use went up from 22.80 to 29.60 events per beneficiary per year.

Many factors may have influenced this increase, such as the economic crisis and employment instability resulting from it, which has driven people to use more healthcare services. Owing to the crisis, there has also been a change to the demographic and epidemiological profile of healthcare users, as beneficiaries who are older and more frequent users are also the ones that seldom leave the healthcare plan.

Considering that Brazil is a country with relatively young population and already spends a higher percentage on healthcare over the GDP than other countries with similar population distribution, we may say that the system sustainability is compromised.



Concerning inflation, among the groups that form IPCA, healthcare services and personal care have reached the second highest rate in the year, amounting to 5.41% (Graph 9). Thus, healthcare prices had 8.24% increase in prices, despite the reduced pace in recent years. They were followed by laboratory and hospital services with 6.45% increase. By the same token, personal hygiene prices went up 5.66% compared to significant decline in the previous year (Table 1).

GRAPH 9 | Annual variation of IPCA – Groups | 2019



Source: IPCA/IBGE (accessed on 23/Mar/2020)

**TABLE 1**

Annual variation of healthcare and personal care IPCA and their subgroups | 2013-2019

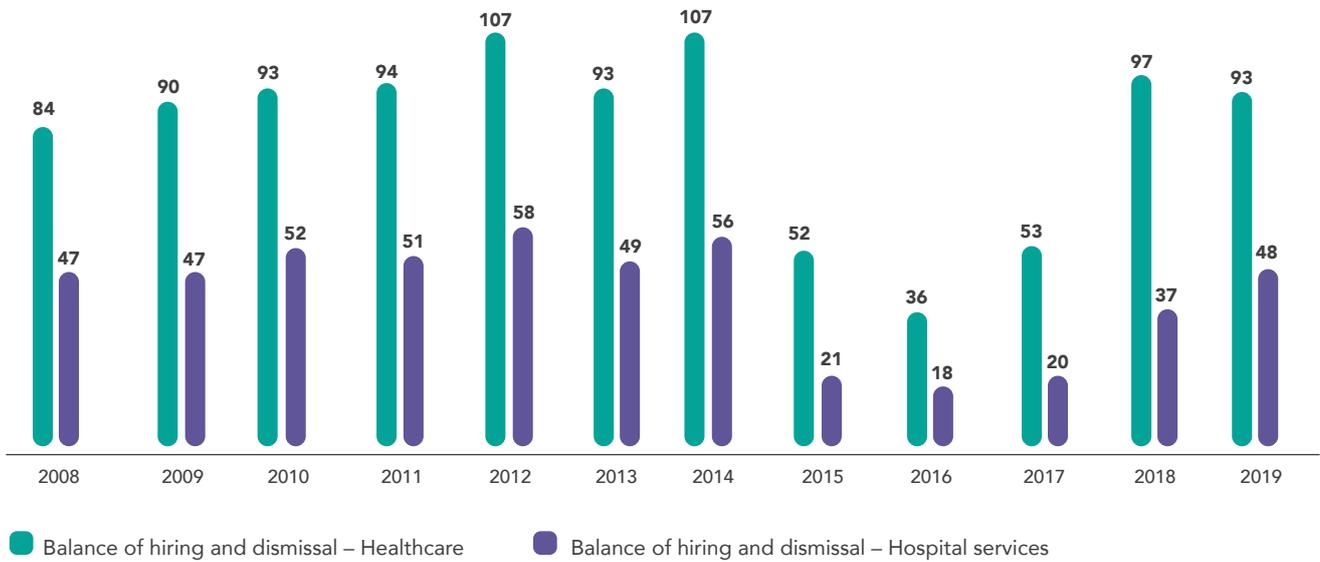
Year	IPCA Health care and personal care	Pharmaceutical products	Auditory products	Medical and dental products	Laboratory and hospital services	Healthcare plan	Personal hygiene
2013	6.95%	4.70%	4.38%	10.65%	6.77%	8.73%	6.58%
2014	6.97%	4.93%	3.91%	8.88%	6.44%	9.44%	6.25%
2015	9.23%	6.89%	6.35%	9.04%	8.43%	12.15%	9.13%
2016	11.04%	12.50%	2.78%	7.21%	6.96%	13.55%	9.49%
2017	6.52%	4.44%	-1.05%	5.34%	3.80%	13.53%	1.77%
2018	3.95%	1.63%	0.82%	3.97%	4.00%	11.17%	-3.22%
2019	5.41%	2.83%	-1.28%	3.18%	6.45%	8.24%	5.66%

Healthcare is an industry that still provides a considerable number of formal employment opportunities. In 2019, a total of 93,000 formal jobs were created in the healthcare industry - approximately half of them in hospital services (48,000 jobs created

in 2019 over 37,000 in 2018 - **Graph 10**).

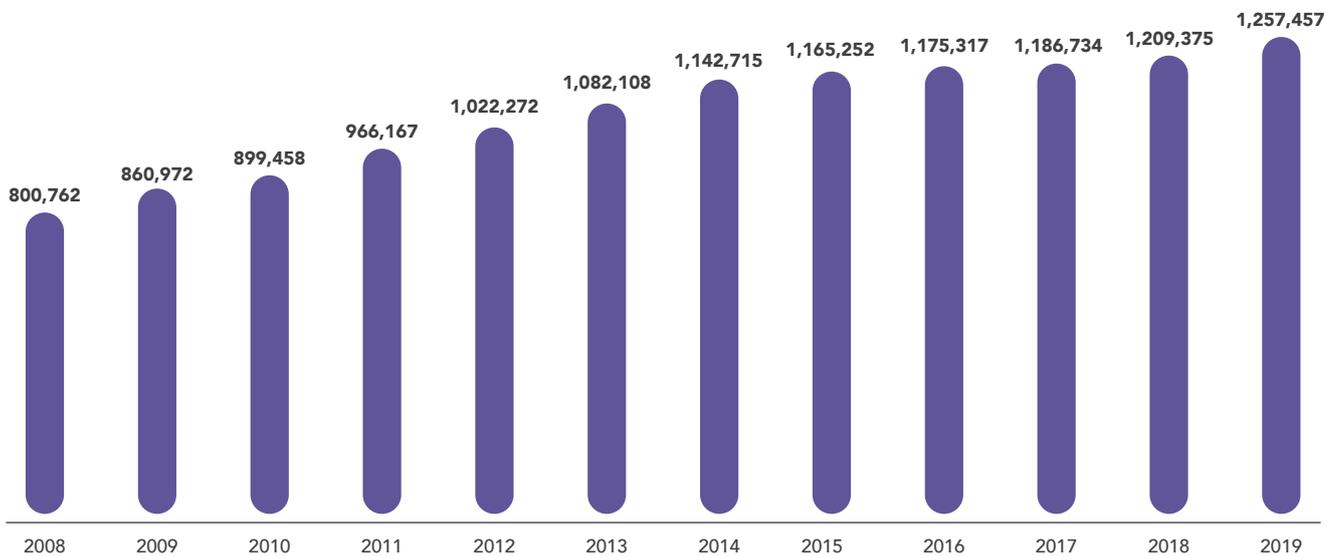
Considering the 48,000 job positions and the data from the Annual Social Information Registry (RAIS) in 2018, the hospital industry has reached the level of 1,257,457 formal jobs in 2019 (**Graph 11**).

GRAPH 10 | Balance of hiring and dismissal from formal jobs in healthcare and hospital activities (in thousands) | 2008-2019



Source: Caged/ Ministry of Labor (accessed on 23/Mar/2020)

GRAPH 11 | Number of employees in hospital services | 2008-2019



Source: Rais and Caged/ Ministry of Labor (accessed on 23/Mar/2020)

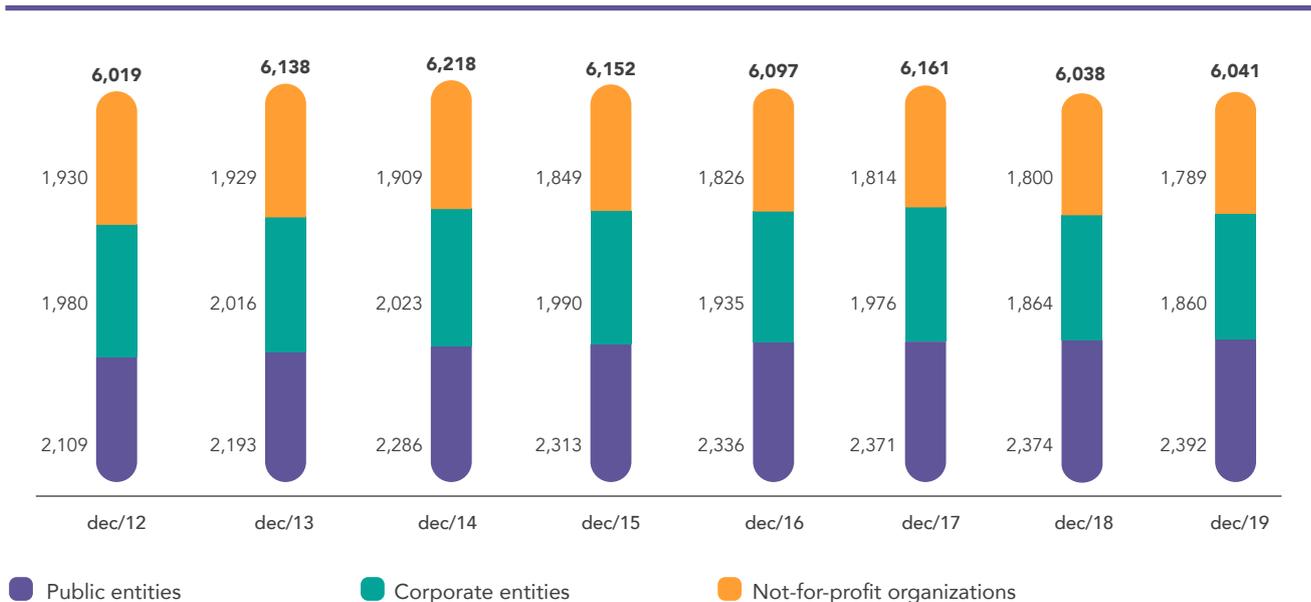
The economic situation and the characteristics of the Brazilian healthcare system have also impacted the clinical services.

The total number of hospital in 2019 was 6,041, practically stable over the data from 2018. Out of the total, 2,392 are public, 1,860 are for-profit and 1,789 are

not-for-profit organizations. Note that there has been a drop primarily in the private sector **(Graph 12)**.

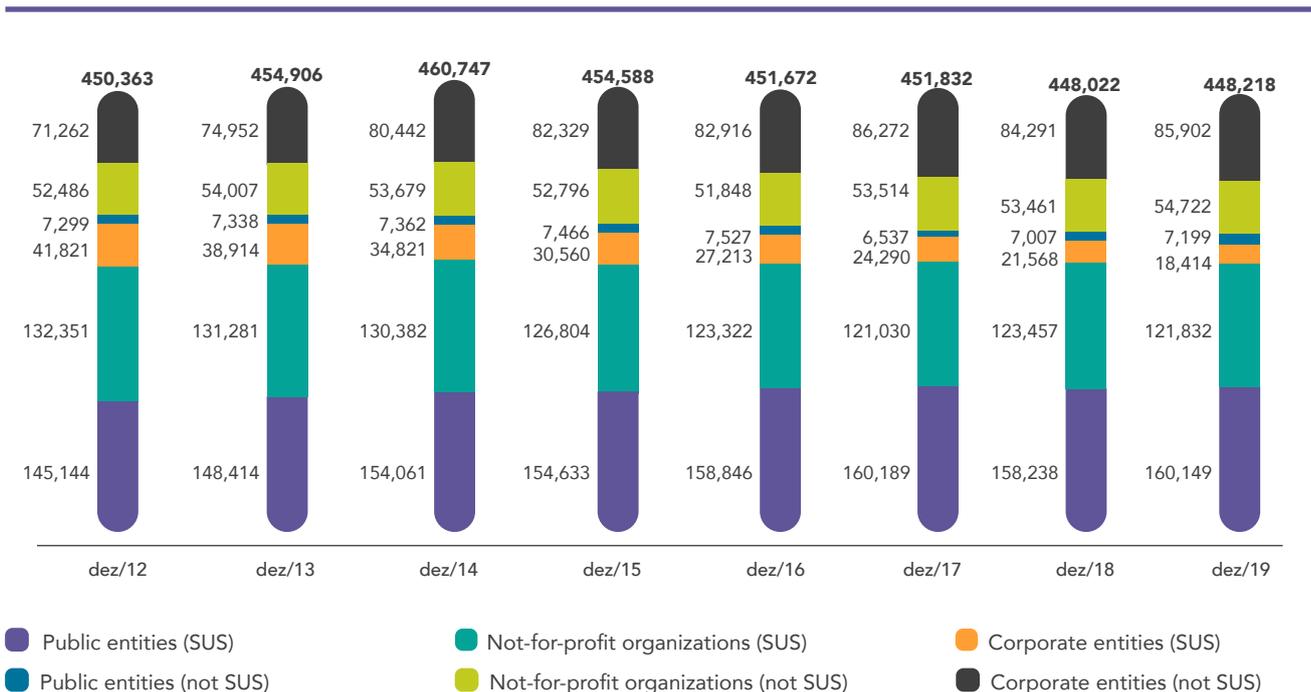
The number of beds, adding up inpatient beds and intensive care unit beds, has decreased (448,218), driven by the reduction of beds in the private hospitals available to SUS patients **(Graph 13)**.

GRAPH 12 | Number of hospitals by legal nature – General and Specialized Hospitals | 2012-2019



Source: CNES/ Ministry of Health (accessed on 17/Apr/2020).

GRAPH 13 | Number of beds (inpatient beds and ICU additional beds) by legal nature – General and Specialized Hospitals | 2012-2019



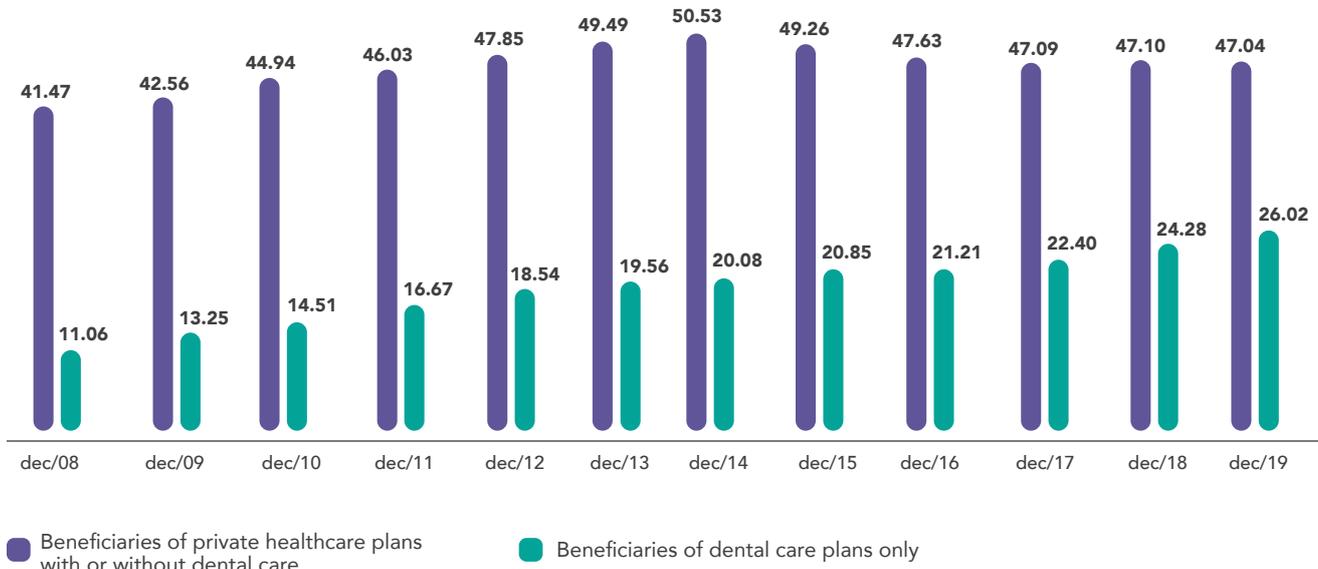
Source: CNES/ Ministry of Health (accessed on 17/Apr/2020).

Market of medical-hospital plans

The number of beneficiaries of medical care private plans, which had remained stable for the last two years, showed slight decrease in 2019, indicating that improvement in the market had not impacted the

increase in beneficiaries. According to ANS data, the number of beneficiaries in December 2019 was 47.04 million, decreasing by 60,000 beneficiaries over the previous year (**Graph 14**).

GRAPH 14 | Beneficiaries of private healthcare plans by coverage (in million) | 2008-2019



Source: ANS (accessed on 10/Feb/2020).

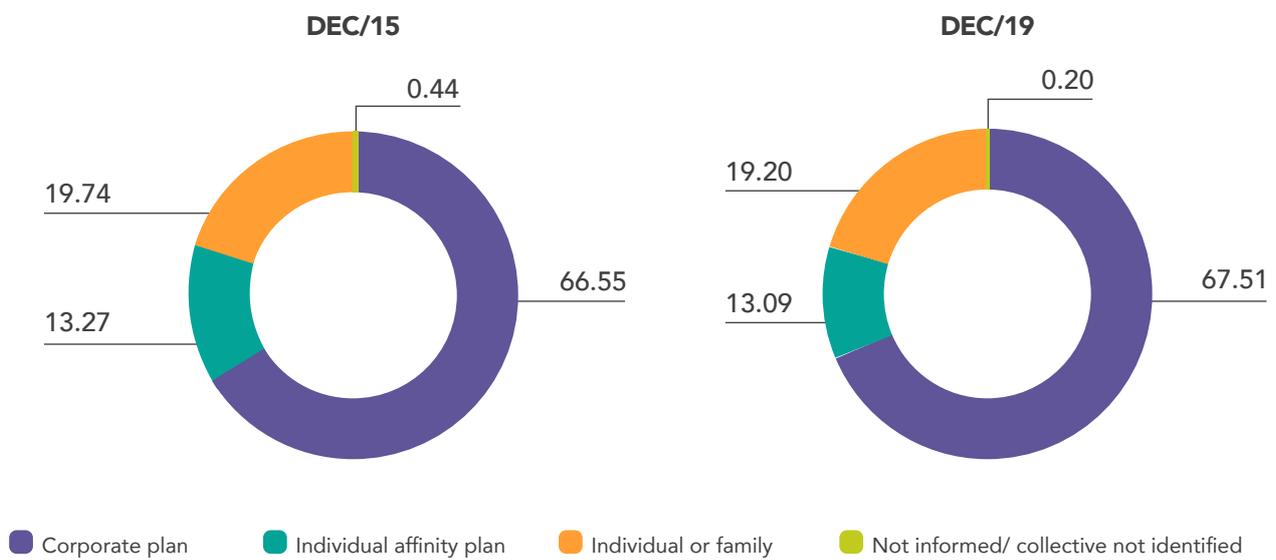


There has been drop of about 60,000 beneficiaries comparing December 2019 to 2018

When analyzing type of contract, corporate plans presented the highest share - 67.51%, having increased one percentage point between December 2015 and December 2019. Affinity plans, in turn, presented reduction of share from 13.27% to 13.09% in the same period. Thus, the total percentage of beneficiaries who

had affinity plans in the end of 2019 reached 80.60%. Alternatively, individual affinity plans followed a decreasing trend in the period, going from 19.74% to 19.20% (Graph 15), despite the reduction in the maximum price increase allowed by ANS, which was 7.35% in 2019 (Graph 16).

GRAPH 15 | Distribution of beneficiaries according to type of contract (%) | 2015 - 2019



Source: ANS (accessed on 10/Feb/2020). It does not include dental care-only companies.

GRAPH 16 | Maximum price increase authorized by ANS for individual plans (%) | 2008-2019



Source: ANS (accessed on 10/Feb/2020).

When we consider the number of beneficiaries by age range, the population aged 30 to 44 years responds for the main portion of private healthcare services, increasing its share from 27.86% in December 2015 to 28.72% in December 2019. We can also note a significant increase in participation of people aged 60 to 74 years, which went up from 8.70% to 9.77% in the same comparison **(Graph 17)**.

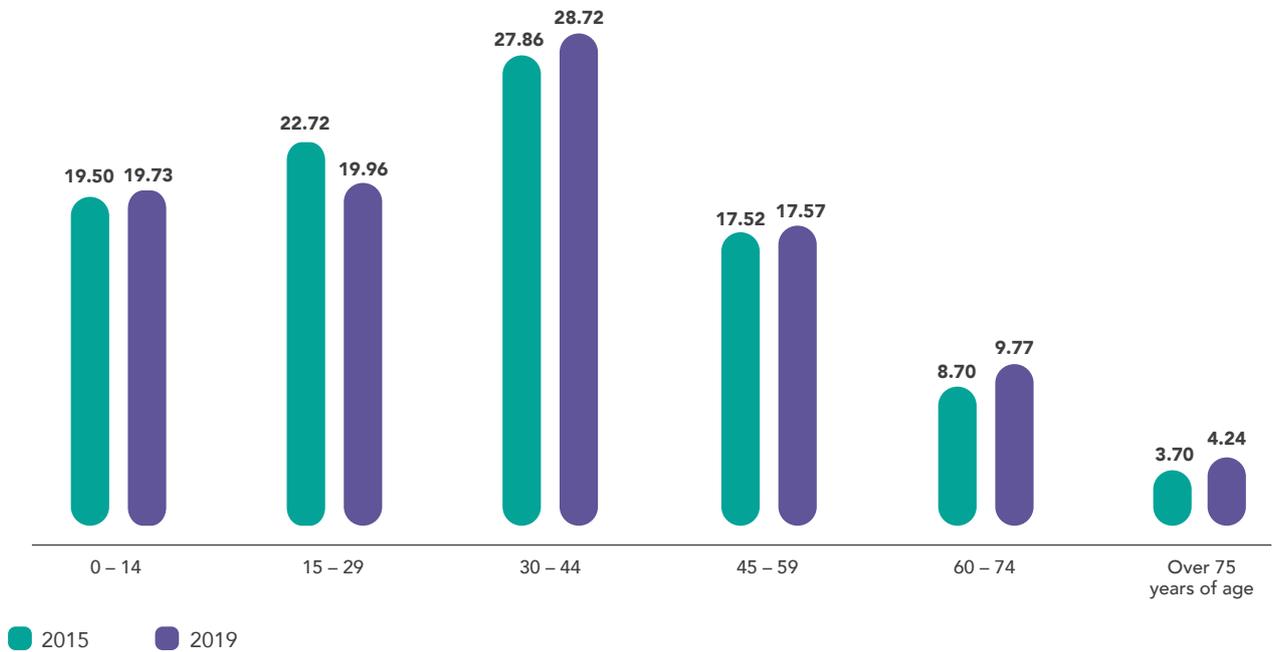
In the age range of people over 80 years, the coverage of beneficiaries of healthcare medical plans (percentage of the population with a private plan) reached 38.50% of the population in 2019. There was also a high number of beneficiaries in the age range 30 to 39 due to the predominance of collective corporate plans. All in all, the coverage rate was 24.20% in 2019 **(Graph 18)**.



In more advanced age ranges, the coverage rate of medical hospital plans is higher (38.50%)

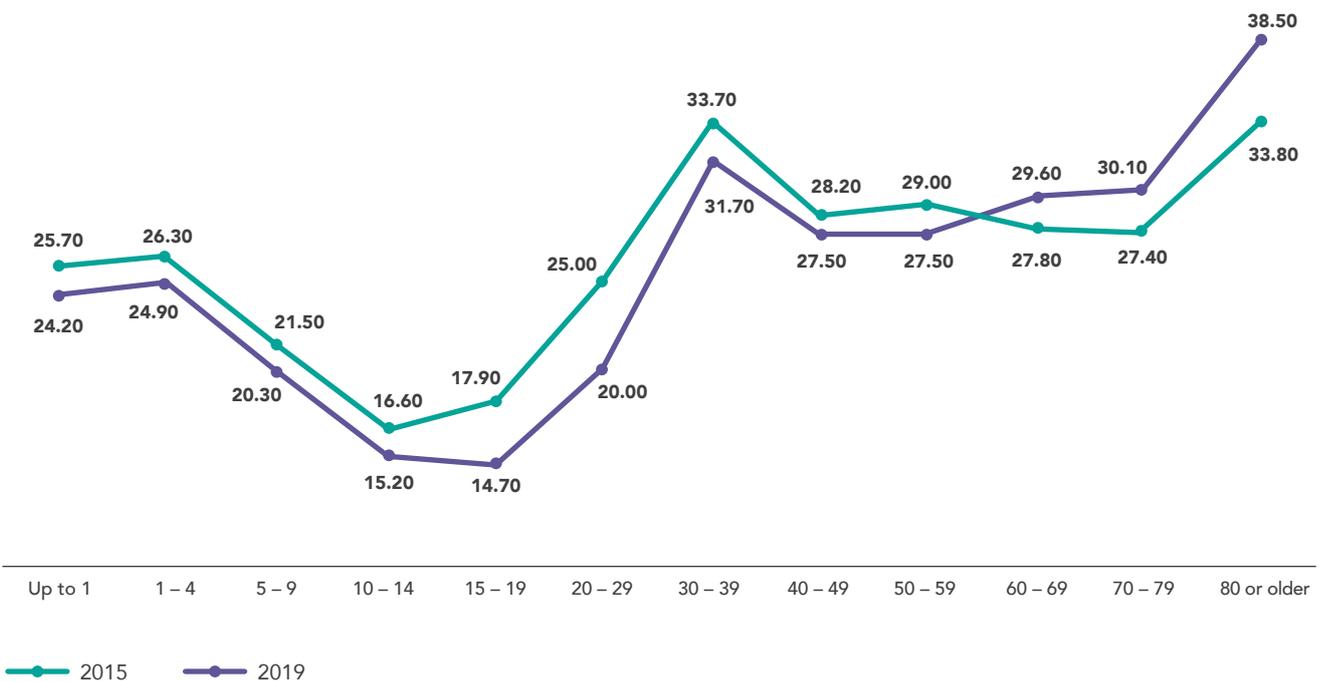


GRAPH 17 | Distribution of beneficiaries by age range (%) | 2015 and 2019



Source: ANS (accessed on 6/Feb/2020). It does not include dental care-only companies.

GRAPH 18 | Coverage rate of beneficiaries of medical hospital plans by age range (%) | 2015 and 2019

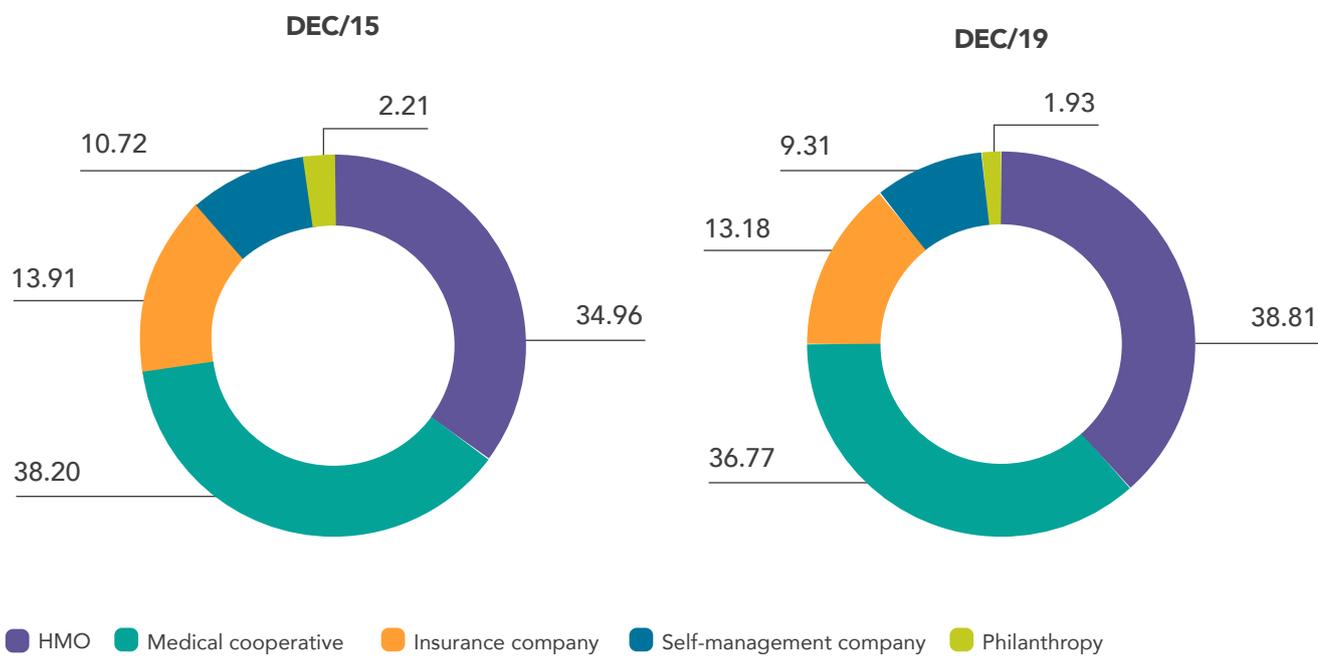


Source: ANS (accessed on 16/Mar/2020). It does not include dental care-only companies.

Concerning distribution of healthcare plans according to modality, there have been some changes. Healthcare management companies were the only ones to gain market share, going from 34.96% in December 2015 to 38.81% in December 2019. The other modalities (medical cooperative, insurance company, insurance company, self-management and not-for-profit organizations) showed decrease in marked share (Graph 19). There has also been a trend of consolidation in healthcare plans. The number of medical-hospital providers with beneficiaries was 1,135 in 2008 and went down to 727 in 2019 (Graph 20).

self-management and not-for-profit organizations) showed decrease in marked share (Graph 19). There has also been a trend of consolidation in healthcare plans. The number of medical-hospital providers with beneficiaries was 1,135 in 2008 and went down to 727 in 2019 (Graph 20).

GRAPH 19 | Distribution of beneficiaries according to provider modality (%) | 2015 and 2019



Source: ANS (accessed on 10/Feb/2020). It does not include dental care-only companies.

GRAPH 20 | Number of medical-hospital providers with beneficiaries | 2008-2019



Source: ANS (accessed on 10/Feb/2020).

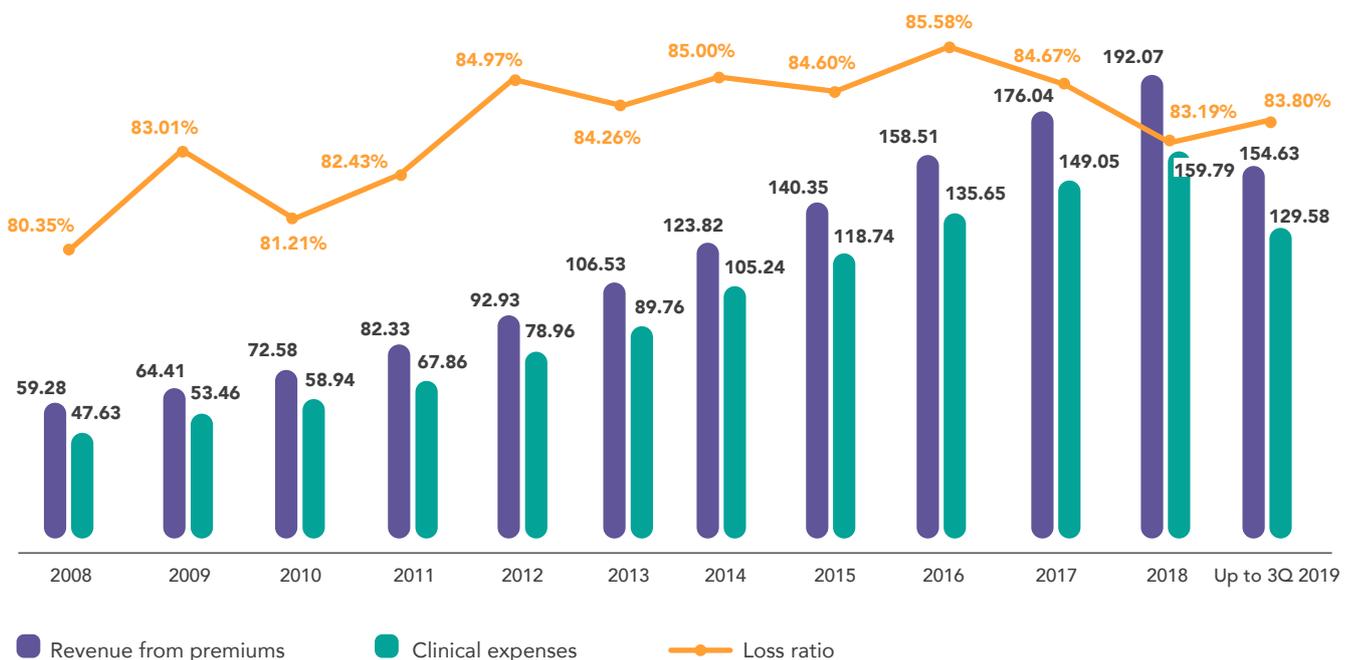


Loss ratio which was 83.19% in 2018, went up to **83.80%** in the third quarter 2019

Revenue from premiums, which totaled R\$192.07 billion in 2018 (9.10% over the data from 2017), reached R\$154.63 billion in the third quarter 2019. In turn, clinical expenses reached R\$159.79 billion in

2018 (7.20% increase) and reached R\$129.58 billion in the third quarter of 2019. Thus, the loss ratio which was 83.19% in 2018, went up to 83.80% in the third quarter 2019 (**Graph 21**).

GRAPH 21 | Revenue from premiums and clinical expenses of providers (R\$ billion) | 2008-2019

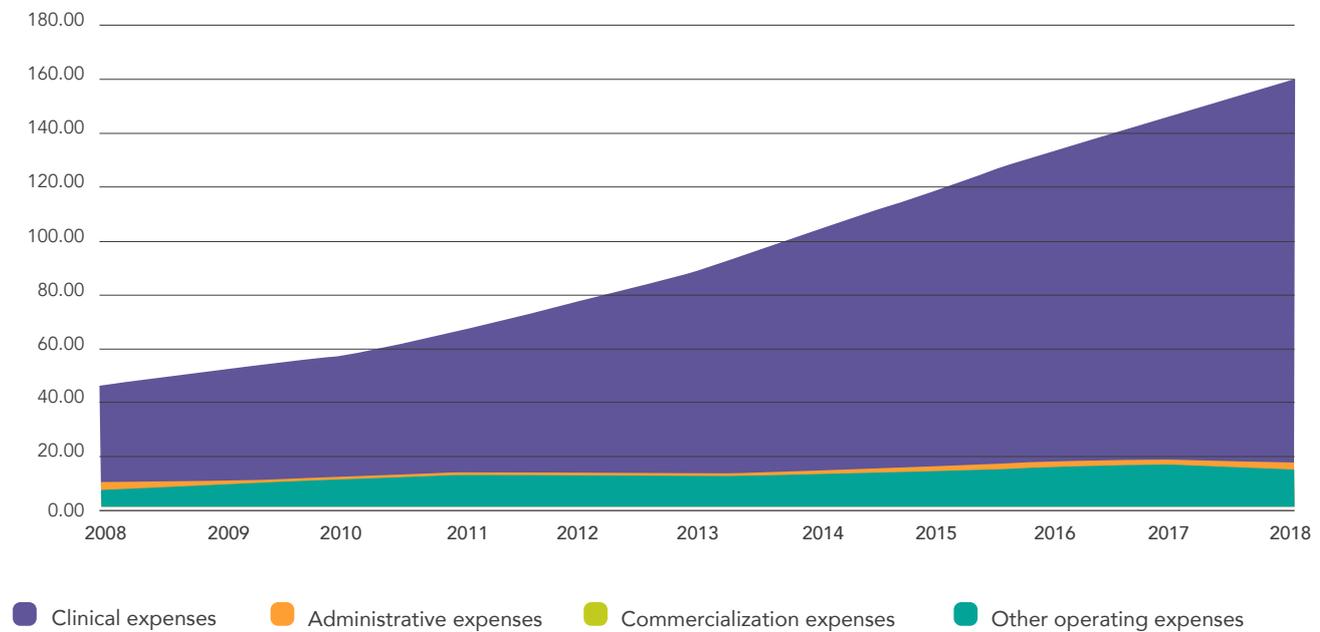


Source: ANS (accessed on 10/Feb/2020). It does not include dental care-only companies.

In 2018, in addition to clinical expenses, providers accounted for administered costs of R\$18.93 billion (0.83% higher than in 2017), commercialization

costs of R\$5.80 billion (8.21% increase) and other operating expenses of R\$15.92 billion (9.42% decrease) (**Graph 22**).

GRAPH 22 | Type of providers' expenses (R\$ billion) | 2008-2018



Source: ANS (accessed on 10/Feb/2020). It does not include dental care-only companies.



Regional characteristics of the market for medical-hospital plans

Southeast Region, gathering 28.63 million beneficiaries, amount to 60.79% of the medical-hospital market in the country, followed by the South Region, with 6.9 million beneficiaries, which equals 14.69%. Despite the fact that these regions still hold the highest volume of beneficiaries, this figure has declined. When comparing December 2015 over December 2019, all regions presented decrease in number of covered lives,

but the worst result came from the Southeast Region, with 5.71% drop (Table 2).

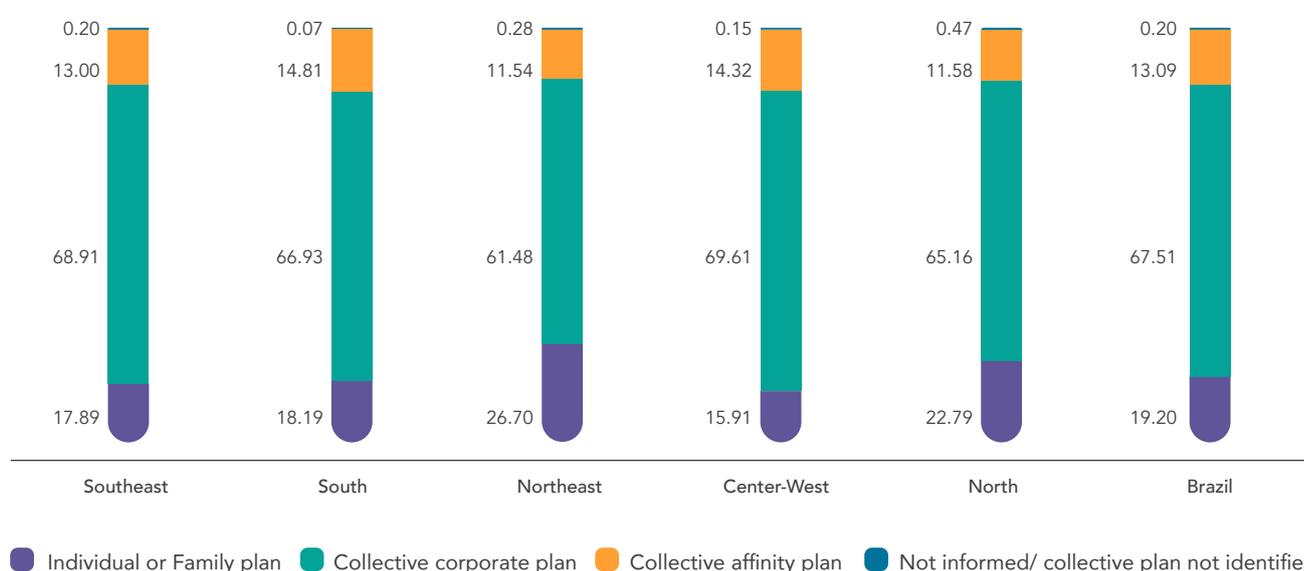
Center-West Region concentrates the greatest share of collective plans (83.93%), divided into 69.61% of corporate plans and 14.32% of individual affinity plan. The Northeast Region presents the highest population of beneficiaries with individual or family plans (26.7% of the total), bringing up the national average (Graph 23).

TABLE 2 | Beneficiaries of private medical healthcare plan, with or without dental coverage, by region | 2015-2019

Region	dec/15	dec/16	dec/17	dec/18	dec/19	19 x 18	19 x 15
Southeast	30,393,997	29,127,662	28,693,368	28,634,410	28,658,511	0.08%	-5.71%
South	7,049,132	6,956,356	6,966,980	6,918,830	6,872,911	-0.66%	-2.50%
Northeast	6,774,483	6,590,190	6,569,856	6,640,824	6,591,551	-0.74%	-2.70%
Center-West	3,196,574	3,163,978	3,096,396	3,174,192	3,189,837	0.49%	-0.21%
North	1,819,330	1,757,163	1,730,514	1,701,943	1,695,483	-0.38%	-6.81%
Not identified	26,560	31,490	30,966	30,000	31,435	4.78%	18.35%
Brazil	49,260,076	47,626,839	47,088,080	47,100,199	47,039,728	-0.13%	-4.51%

Source: ANS (accessed on 10/Feb/2020). It does not include dental care-only companies.

GRAPH 23 | Distribution of beneficiaries according to contract by region (%) | December 2019

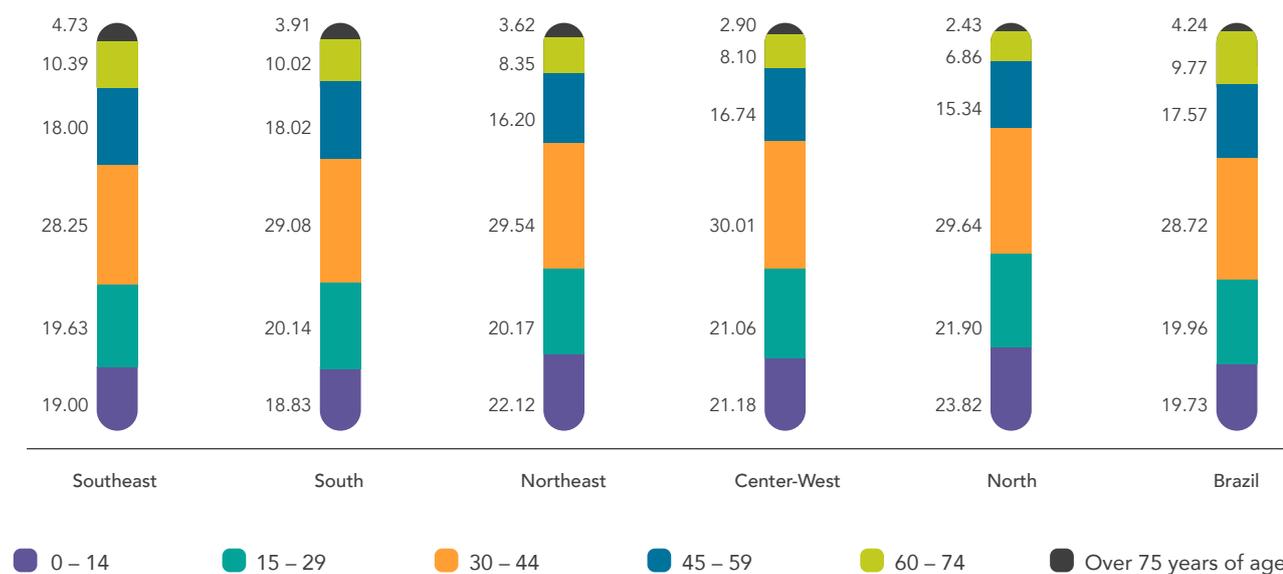


Source: ANS (accessed on 10/Feb/2020). It does not include dental care-only companies.

The Southeast Region represents the highest proportion of elderly (people aged 60 years or more) in the total population of beneficiaries - 15.12% in December 2019. The North Region is on the other extreme, in which 23.82% of the beneficiaries are aged up to 14 years (Graph 24).

The coverage rate (percentage of the population covered by individual private healthcare plans) is the highest in the Southeast Region (35%) and the lowest in the North Region (10.40%), according to data from December 2019 (Table 3).

GRAPH 24 | Distribution of beneficiaries according to age range by region (%) | December 2019



Source: ANS (accessed on 10/Feb/2020). It does not include dental care-only companies.

TABLE 3 | Coverage rate of beneficiaries of medical-hospital plans by region | 2015-2019

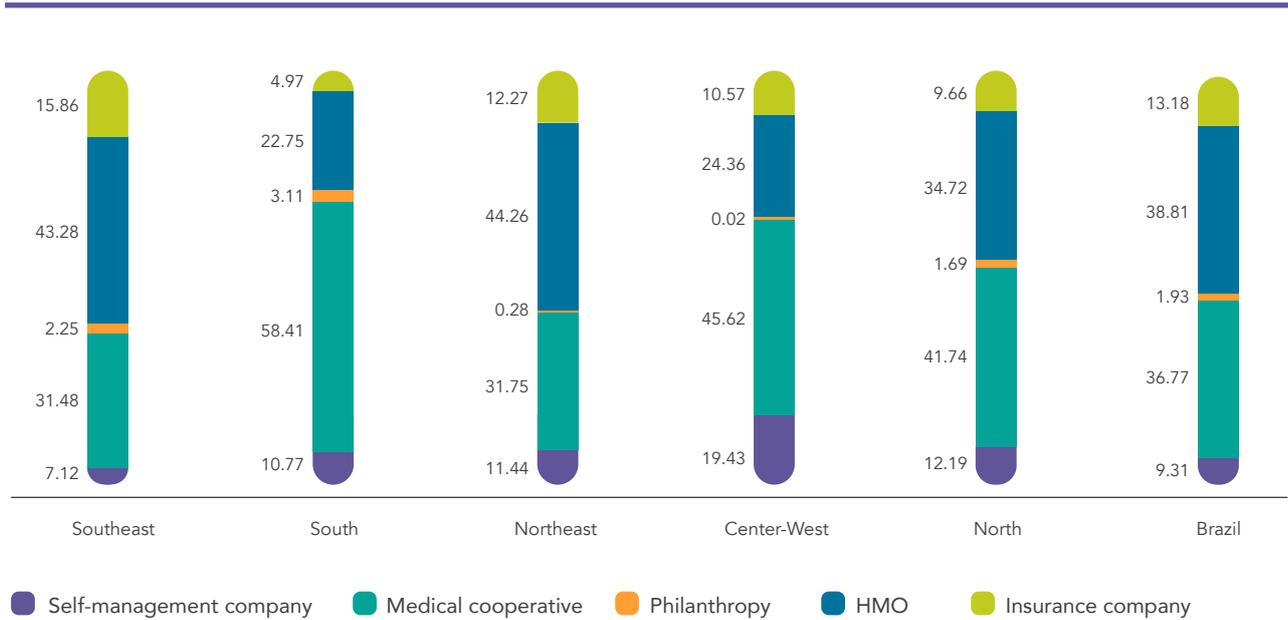
Region	dec/15	dec/16	dec/17	dec/18	dec/19
Southeast	38.50%	37.20%	35.50%	35.10%	35.00%
South	25.60%	25.40%	24.90%	24.90%	24.80%
Northeast	12.70%	12.50%	12.20%	12.20%	12.20%
Center-West	21.40%	22.00%	21.50%	21.20%	21.60%
North	11.70%	11.00%	10.70%	10.50%	10.40%
Brazil	26.00%	25.30%	24.40%	24.20%	24.20%

Source: ANS (accessed on 10/Feb/2020). It does not include dental care-only companies.

When we consider the different modalities of healthcare plans, we have noticed that in regions South, North and Center-West the main paying source is medical cooperative plans. In Southeast and Northeast regions, conversely, HMOs lead the group. The presence of self-managed plans is more relevant

in the Center-West region showing 19.43% share of all medical-hospital plan beneficiaries in December 2019. The greatest proportion of beneficiaries in healthcare insurance companies comes from the Southeast Region, reaching 15.86% of the total in the end of 2019 **(Graph 25)**.

GRAPH 25 | Distribution of beneficiaries according to plan modality by region (%) | December 2019



Source: ANS (accessed on 10/Feb/2020). It does not include dental care-only companies.



In the North Region, 23.82% of beneficiaries are younger than **14 years**

Clinical and epidemiological profile

Have knowledge about the clinical and epidemiological profile of the served population is a pre-requirement for appropriate clinical management

Qualified information in the patient medical record is essential to get to know the epidemiological profile





Similarly to previous years, Anahp has asked member hospitals to prepare an annual report listing all admissions to describe the characteristics of the served population. To be relevant, correct identification of the patient diagnosis in the medical record is of utmost importance.

Hospital discharges are analyzed according to the main diagnosis, based on the respective chapter of

the International Code of Diseases - 10th edition (ICD-10), by World Health Organization.

In 2019, 10.45% of the hospital discharges of the sample were classified under the chapter "Diseases of the Respiratory System" of ICD-10. The other very significant chapter was "Diseases of the Genitourinary System", amounting to 9.88% of the total, followed by "Diseases of the Digestive System", with 9.31%.

Epidemiological profile 2019

The patient record is essential for clinical management monitoring, as it provides information about the diagnosis and the progression of patient status, serving as a tool to provide evidence of safe care.

In most hospitals, Medical Archive (Same) is responsible for managing the clinical information by storing, tracking down and auditing patient records, supported by the Committees of Patient Record Review and Deaths. To present, all hospitals keep track of their diagnoses and performed procedures when hospital discharge is given.

To ensure the quality of information, the Medical Archive team codifies the diagnoses and procedures,

according to the rules advocated by ICD-10. The active participation of Medical Archive in codifying the patient records conveys greater quality to the documented diagnoses.

In 2019, 95.56% of the respondents in the sample already had implemented electronic prescription. The implementation of electronic medical records reached 91.11% of the organizations. It is worth mentioning that 75% of the member hospitals in December 2019 completed the form using SINHA platform.

Other data about progression of the patient records are found in **Table 1** and indicate opportunities for improving hospitals' clinical management.

TABLE 1 | Quality indicators in the medical records of Anahp Hospitals (hospital percentage) | 2019

Indicators	2019
Implemented electronic prescription	95.56%
Implemented electronic medical record	91.11%
Picture archiving and communication system (PACS)	85.56%
Bar coding or RFID	84.44%
Business Intelligence (BI)	82.22%

Source: SINHA/ Anaph

Hospital discharges were analyzed using the main diagnosis according to ICD-10 chapter.

The classification of diseases and conditions, excluding the cases without record (ignored), involved: neoplasm (cancer); digestive tract diseases; pregnancy, delivery and postpartum; genital-urinary tract diseases; circulatory system diseases; symptoms (poorly defined signs and conditions); factors (people in contact with the healthcare center to perform tests and investigations, such as monitoring tests post neoplasm treatment, removal and adjustment of braces and prostheses, post-natal care and tests); respiratory tract diseases; lesions and poisoning (fractures and lesions resulting from accidents and external causes); osteomuscular tract disorders; endocrine diseases (**Table 2 and Graph 1**).

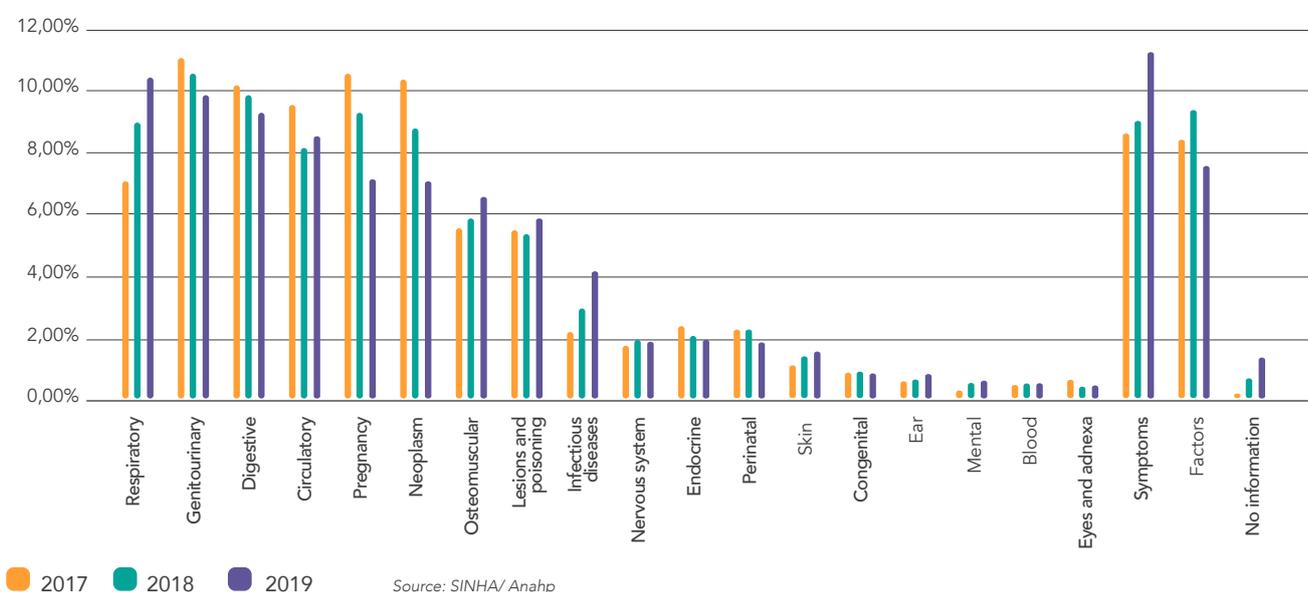
The improvement of clinical and epidemiological profile depends directly on data quality inputted by the multiprofessional team during care provision. Some general classification, such as factors and symptoms, may show a less specific epidemiological profile, with little guidance. In 2019, there was increase in hospital discharges classified with these less specific ICDs, which indicates a window of opportunity for improving quality of the epidemiological information, which has become a priority in Anahp's work group that addresses these issues.

Out of all hospital discharges analyzed, 10.45% matched the respiratory system chapter, followed by genitourinary system, with 9.88% share of total discharges.

TABLE 2 | Hospital discharges according to ICD-10 chapter | 2017-2019

ICD Chapter	2017		2018		2019	
	Total	%	Total	%	Total	%
Respiratory	112,412	7.11	149,892	8.96	197,671	10.45
Genitourinary	175,021	11.07	176,855	10.57	186,922	9.88
Digestive	160,949	10.18	164,615	9.84	176,124	9.31
Circulatory	151,147	9.56	135,907	8.13	160,855	8.50
Pregnancy	166,641	10.54	155,581	9.30	134,926	7.13
Neoplasm	164,270	10.39	147,177	8.80	133,785	7.07
Osteomuscular	88,222	5.58	98,552	5.89	123,935	6.55
Lesions and poisoning	86,641	5.48	89,824	5.37	110,788	5.86
Infectious diseases	34,941	2.21	49,540	2.96	78,834	4.17
Nervous system	28,142	1.78	33,663	2.01	36,778	1.94
Endocrine	37,945	2.40	34,864	2.08	36,357	1.92
Perinatal	36,364	2.30	38,642	2.31	35,827	1.89
Skin	18,182	1.15	24,070	1.44	30,181	1.60
Congenital	14,387	0.91	15,936	0.95	16,956	0.90
Ear	9,961	0.63	11,490	0.69	16,644	0.88
Mental	5,217	0.33	9,288	0.56	12,476	0.66
Blood	7,747	0.49	9,044	0.54	10,817	0.57
Eyes and adnexa	10,909	0.69	7,321	0.44	8,965	0.47
Symptoms	136,127	8.61	151,205	9.04	212,598	11.24
Factors	133,281	8.43	156,921	9.38	143,518	7.59
No information	2,530	0.16	12,291	0.73	26,453	1.40
Total	1,581,036	100.00	1,672,677	100.00	1,891,413	100.00

Source: SINHA/Anahp

GRAPH 1 | Hospital discharges according to ICD-10 chapter (%) | 2017-2019

We have carried out an analysis of hospital discharges by ICD-10 and region of the country (**Table 3**), showing regional differences in prevalence.



TABLE 3 | Hospital discharges according to ICD-10 chapter, by region | 2019

ICD Chapter					
	South	Southeast	Northeast	North and Center-West	Brazil
Respiratory	10.56%	11.36%	5.99%	8.64%	10.45%
Genitourinary	8.47%	10.28%	10.16%	12.19%	9.88%
Digestive	8.13%	9.48%	10.63%	11.11%	9.31%
Circulatory	10.20%	7.49%	9.86%	7.81%	8.50%
Pregnancy	5.88%	7.14%	11.67%	6.34%	7.13%
Neoplasm	5.97%	6.85%	12.95%	5.71%	7.07%
Osteomuscular	5.88%	7.20%	5.07%	6.13%	6.55%
Lesions and poisoning	4.89%	6.52%	4.65%	6.12%	5.86%
Infectious diseases	3.72%	4.64%	2.85%	4.01%	4.17%
Nervous system	2.16%	1.99%	1.45%	1.39%	1.94%
Endocrine	1.65%	1.86%	2.47%	2.77%	1.92%
Perinatal	1.16%	2.13%	3.13%	1.44%	1.89%
Skin	1.62%	1.71%	1.12%	1.23%	1.60%
Congenital	1.20%	0.77%	1.10%	0.39%	0.90%
Ear	0.75%	1.08%	0.43%	0.38%	0.88%
Mental	0.83%	0.64%	0.45%	0.37%	0.66%
Blood	0.55%	0.57%	0.66%	0.52%	0.57%
Eyes and adnexa	0.32%	0.64%	0.21%	0.17%	0.47%
Symptoms	15.62%	10.73%	3.56%	7.29%	11.24%
Factors	6.24%	6.62%	11.48%	15.71%	7.59%
No information	4.20%	0.30%	0.11%	0.28%	1.40%
Total	100.00%	100.00%	100.00%	100.00%	100.00%

It has been observed that the percentage of hospital discharges by respiratory diseases is higher in the Southeast region, which may be associated with the highest incidence of these diseases in large urban centers.

Air pollution, thermal discomfort and wide temperature variations were considered aggravating factors for population health after the studies about the influence of intra-urban conditions on respiratory and circulatory diseases in the elderly of the city of Sao Paulo¹.

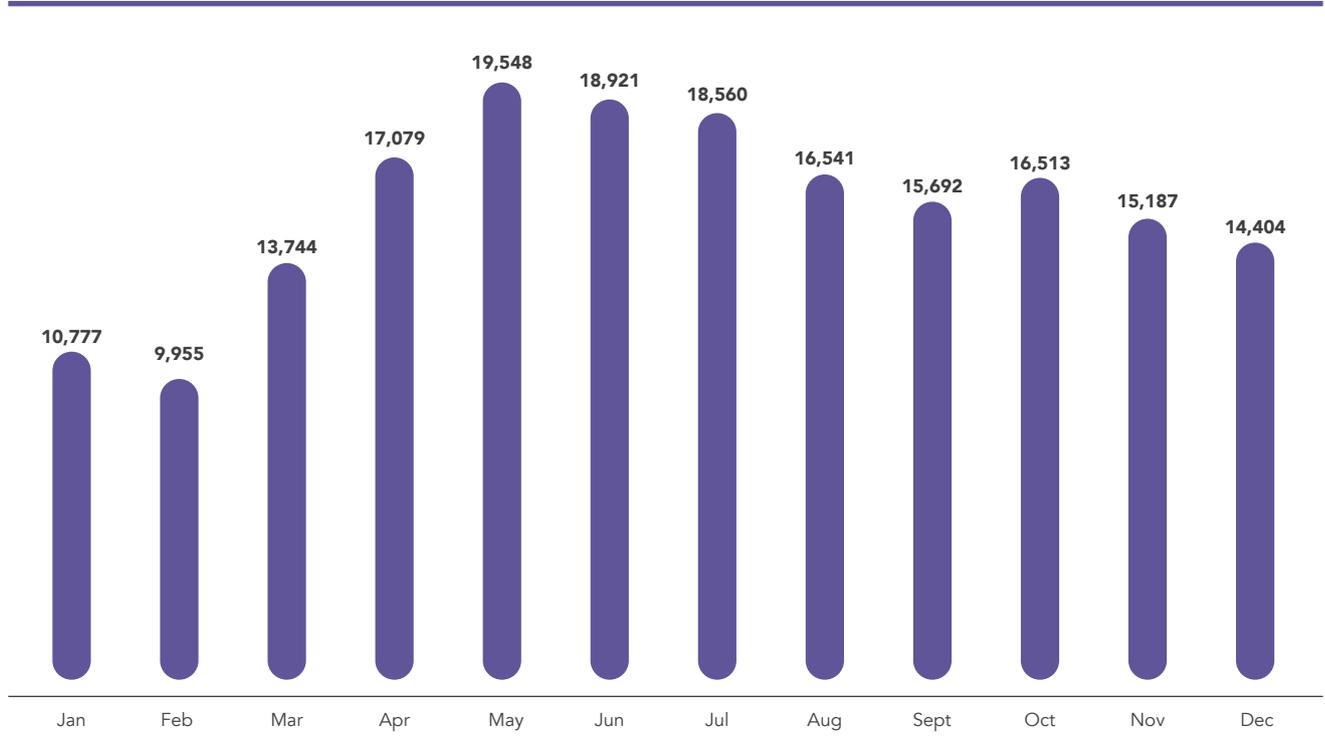
In addition, as we can see in **Graph 2**, respiratory diseases present their peaks in May, June and July (winter months), concentrating most of hospital discharges during this period.

The expressive increase in number of hospital admissions due to respiratory diseases in dry months is also reported in the literature², showing that seasonality of such diseases happens during the dry

months (May, June, July and August). It is important to note that weather conditions are triggering factors for manifestations of some diseases, such as respiratory affections, but we should always analyze physical, biological, economic, social, psychological and cultural characteristics of our population³.

Respiratory system diseases include: acute upper respiratory tract infections (such as common cold, sinusitis, pharyngitis, tonsillitis, laryngitis); influenza (cold) and pneumonia; acute lower respiratory tract diseases (such as bronchitis, bronchiolitis); other diseases of upper respiratory tract (such as rhinitis, sinusitis, nasal polyp); chronic lower tract diseases (such as bronchitis, emphysema, asthma); lung diseases caused by external agents; other respiratory affections that impact primarily the interstitial layer; suppurative and necrotic conditions of the lower respiratory tract; other pleural diseases; other respiratory system diseases.

GRAPH 2 | Hospital discharges due to respiratory system diseases by month | 2019



Source: SINHA/ Anahp

¹ SILVA, E. N.; RIBEIRO, H. "Impact of Urban Atmospheric Environment on Hospital Admissions in the Elderly". In: Revista de Saúde Pública. São Paulo, v. 46, n. 4, p. 694-701, 2012. Available on: <doi.org/10.1590/S0034-89102012005000052>; Accessed on 18/04/2020.
² ASSIS NETO, R. P. Análise das Internações por Doenças Respiratórias em um Hospital Universitário. Trabalho de conclusão de curso, licenciatura em Enfermagem, Universidade Federal de Campina Grande, 2019. Available on: <dspace.sti.ufcg.edu.br:8080/jspui/handle/riufcg/7565>; accessed on 18/04/2020.
³ SETTE, D. M.; RIBEIRO, H.; SILVA, E. N. "O índice de temperatura fisiológica equivalent (PET) aplicado a Londrina-PR. e sua relação com as doenças respiratórias". In: Revista Geonorte. Manaus, edição especial 2, v. 2, n. 5, p. 813-825, 2012. Available on: <pdfs.semanticscholar.org/ced9/fceeb4bd976d2d28f9ad20dc92713a51fb8d.pdf>; Accessed on 18/04/2020.

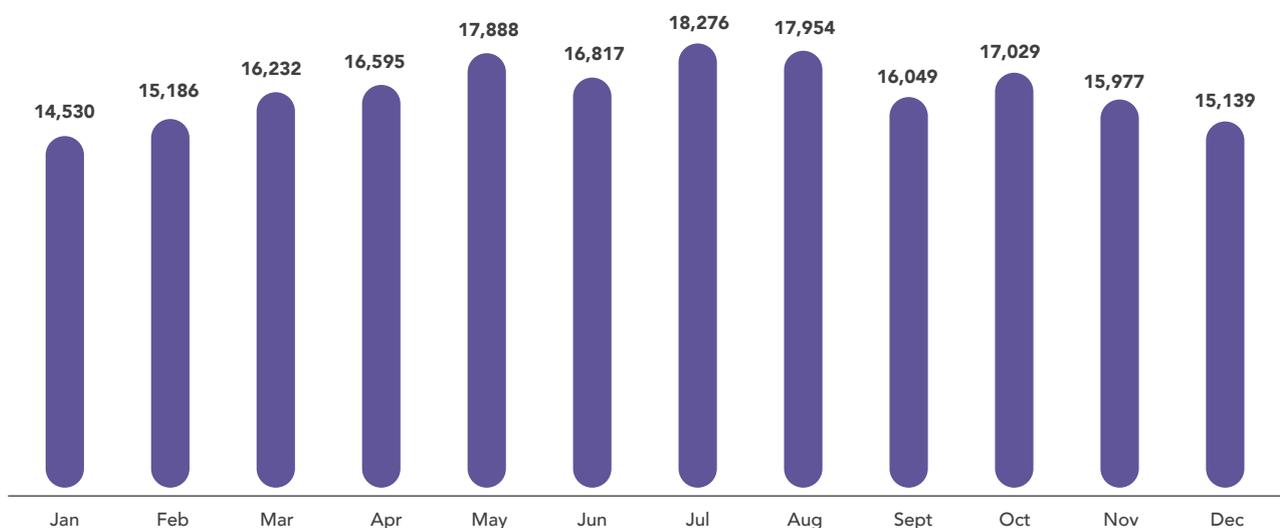


Increase in hospital discharges due to respiratory and circulatory diseases in May, June and July (winter months)

Upon analyzing the hospital discharges due to circulatory system diseases, it is possible to detect a similar trend of incidence during winter months: May, June and July (Graph 3). A study showed that cardiovascular system diseases are influenced by air temperature, whose variation impacts the body homeostasis (relative body stability), leading to the affections. It was observed that deaths caused by cardiovascular diseases are influenced by the weather and tend to increase during colder months in the

year, which is not directly related to hospital admissions. The circulatory system diseases include: acute rheumatic fever; chronic rheumatic heart diseases; hypertensive diseases; heart ischemic diseases; pulmonary cardiac and pulmonary circulatory diseases; other forms of heart diseases; cerebrovascular diseases; arteries, arterioles and capillary vessel diseases; veins, lymphatic vessels and lymphatic ganglia diseases, not classified anywhere else; other disorders, and those not specific to the circulatory system.

GRAPH 3 | Hospital discharges due to circulatory system diseases by month | 2019



Source: SINHA/ Anahp

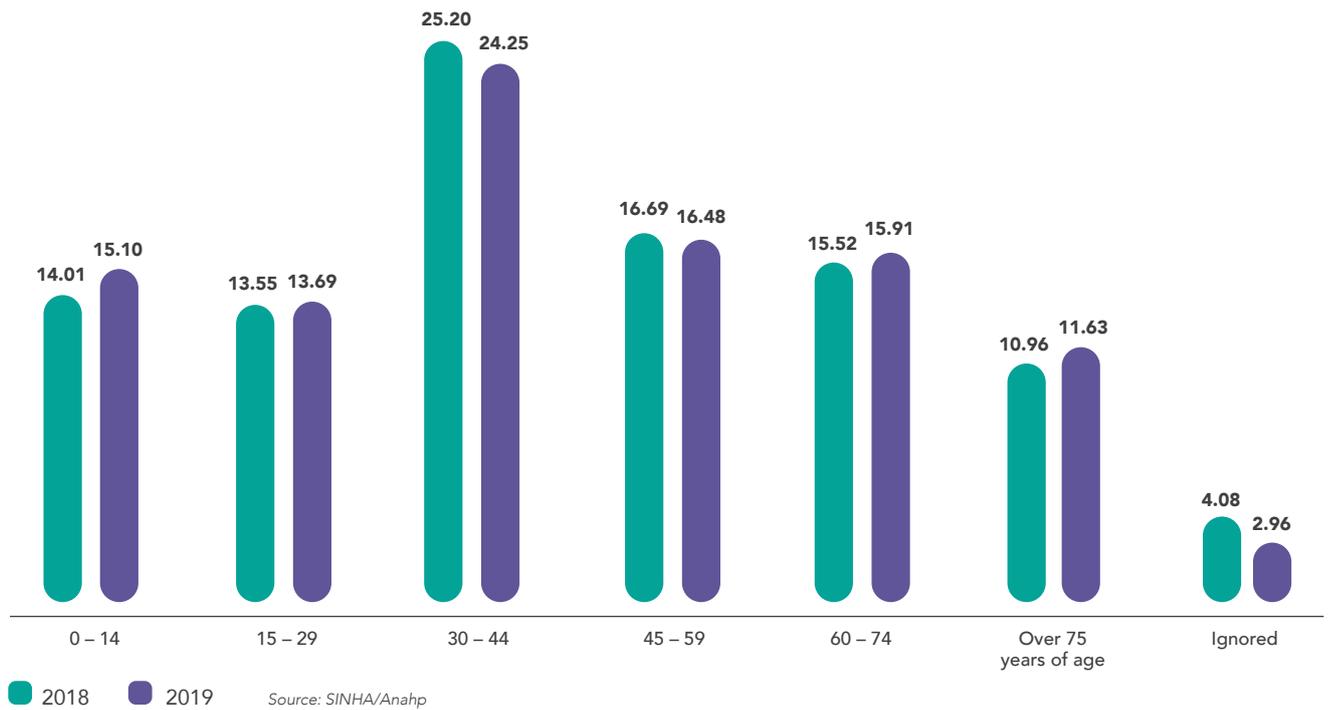
⁴ GALVÃO, N.; LEITE, M. L.; VIRGENS FILHO, J. S. "Análise de fatores climáticos e doenças do aparelho circulatório em idosos para diferentes localidades do estado do Paraná". In: Estudos Interdisciplinares sobre o Envelhecimento. Porto Alegre, v. 22, n. 3, p. 121-136, 2017. Available on: <www.seer.ufrgs.br/RevEnvelhecer/article/view/74918>; accessed on 18/04/2020.

Graph 4 brings the percentage of hospital discharges by age range.

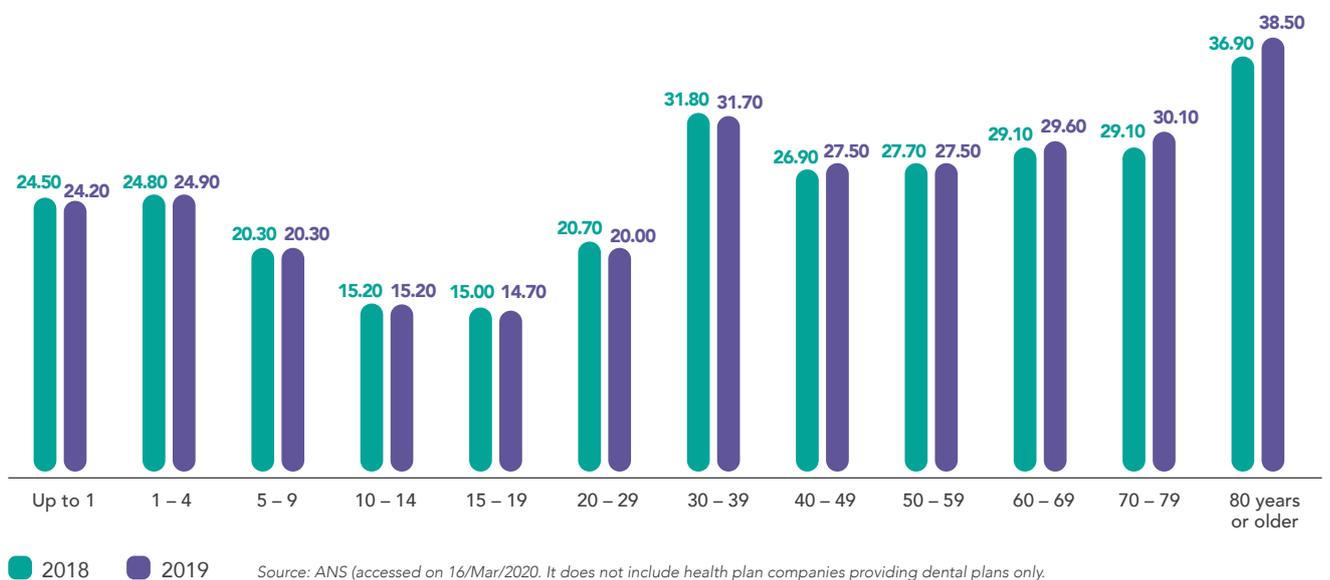
The share of hospital discharges of patients over 75 years was 11.63% in 2019. In this age range, the coverage

of beneficiaries of healthcare medical plans (percentage of the population with a private healthcare plan) is higher, reaching 30.10% among beneficiaries aged 70 to 79 years and 38.50% among those aged over 80 years (**Graph 5**).

GRAPH 4 | Hospital discharges by age range (%) | 2018 and 2019



GRAPH 5 | Rate of coverage of medical-hospital plan beneficiaries by age range (%) | 2018 and 2019





The South Region had the largest proportion of patients aged over 75 years

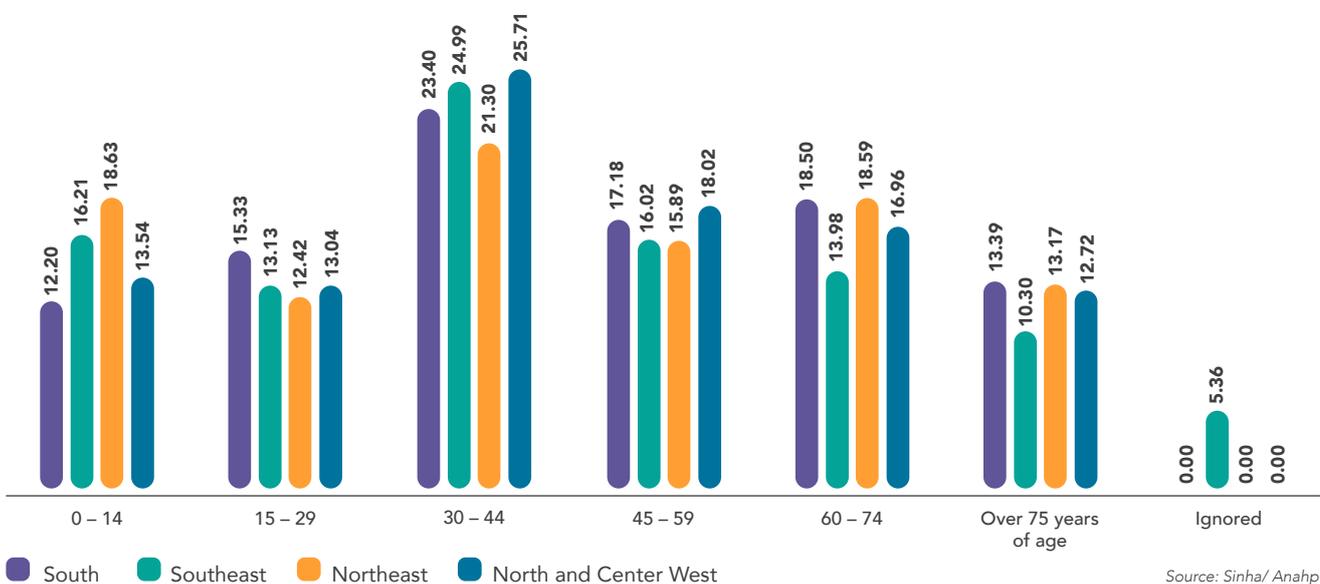
Upon analyzing the discharges by age range and region, it is possible to note that the South Region had more patients aged over 75 years, whereas the Northeast Region had more younger patients (aged 0 to 14 years).

North and Center West Regions, in turn, were responsible for the highest percentage of patients aged 30 to 59 years: 43.73% (Graph 6).

When we correlate main diagnosis to age range, it is possible to analyze the incidence of neoplasm among patients aged 45 to 74 years: 3.90%.

Respiratory system diseases are more frequent in children and adolescents - 3.23% in the age range 0 to 14 years, followed by the elderly - 2.43% in the age range over 60 years (Table 4). The causes of respiratory diseases are complex and multifactorial, including environmental factors such as the seasons, family conditions, exposure to smoking, nutritional status, exposure to biological agents such as pollen, among others, and these factors tend to affect the most extreme age groups (children younger than 5 years and elderly people over 65 years)⁵.

GRAPH 6 | Hospital discharges by age range and region (%) | 2019



Source: Sinha/ Anahp

⁵ ROSA, A. M.; IGNOTTI, E.; HACON, S. S.; CASTRO, H. A. "Análise das internações por doenças respiratórias em Tangará da Serra – Amazônia Brasileira". In: *Jornal Brasileiro de Pneumologia*. São Paulo, v. 34, n. 8, p. 575-582, 2008. Available on: <doi.org/10.1590/S1806-37132008000800006>; accessed on 18/04/2020.

TABLE 4 | Hospital discharges according to main diagnosis and grouped by chapter and age range | 2019

ICD-10 Chapter	2019							Grand Total
	0 – 14	15 – 29	30 – 44	45 – 59	60 – 74	Over 75 years of age	Not informed	
Respiratory	3.23%	1.85%	1.78%	0.99%	1.01%	1.42%	0.17%	10.45%
Genitourinary	0.76%	1.34%	2.91%	1.94%	1.43%	1.07%	0.44%	9.88%
Digestive	0.83%	1.13%	2.28%	2.02%	1.83%	0.95%	0.27%	9.31%
Circulatory	0.10%	0.29%	1.17%	1.89%	2.74%	2.17%	0.15%	8.50%
Pregnancy	0.02%	2.19%	4.30%	0.04%	0.00%	0.00%	0.58%	7.13%
Neoplasm	0.28%	0.38%	1.35%	1.81%	2.09%	1.03%	0.13%	7.07%
Osteomuscular	0.25%	0.74%	1.75%	1.77%	1.36%	0.55%	0.13%	6.55%
Lesions and poisoning	0.71%	1.01%	1.42%	1.05%	0.84%	0.72%	0.11%	5.86%
Infectious diseases	0.77%	0.85%	0.85%	0.50%	0.52%	0.63%	0.04%	4.17%
Nervous system	0.33%	0.29%	0.43%	0.36%	0.30%	0.22%	0.01%	1.94%
Endocrine	0.11%	0.25%	0.65%	0.36%	0.24%	0.20%	0.11%	1.92%
Perinatal	1.57%	0.02%	0.03%	0.00%	0.00%	0.00%	0.28%	1.89%
Skin	0.33%	0.27%	0.34%	0.25%	0.21%	0.15%	0.03%	1.60%
Congenital	0.61%	0.08%	0.09%	0.05%	0.03%	0.01%	0.02%	0.90%
Ear	0.35%	0.09%	0.12%	0.11%	0.12%	0.08%	0.01%	0.88%
Mental	0.02%	0.15%	0.16%	0.11%	0.09%	0.12%	0.00%	0.66%
Blood	0.12%	0.06%	0.11%	0.07%	0.09%	0.11%	0.01%	0.57%
Eyes and adnexa	0.05%	0.05%	0.06%	0.09%	0.13%	0.07%	0.01%	0.47%
Symptoms	1.86%	1.71%	2.52%	1.79%	1.76%	1.46%	0.14%	11.24%
Factors	2.69%	0.71%	1.53%	0.98%	0.86%	0.50%	0.32%	7.59%
No information	0.11%	0.23%	0.39%	0.29%	0.24%	0.14%	0.00%	1.40%
Total	15.10%	13.69%	24.25%	16.48%	15.91%	11.62%	2.96%	100.00%

Source: SINHA/ Anahp

Concerning mean length of stay by age range, we have observed longer mean length of stay than the overall mean for patients over the age of 60 years (**Graph 7**). They tend to present many comorbidities, and it is necessary to remain more days in the hospital, until they become stable again. The discharges that are related with longer length of stay are infectious diseases (**Table 5**), under the chapter “certain infectious and parasitic diseases” of ICD-10: intestinal infectious diseases; tuberculosis; some zoonotic bacterial diseases; other bacterial diseases; infectious with predominantly sexual mode of transmission; other spirochetal diseases; other diseases caused by chlamydiae; rickettsioses; viral infections of the central nervous system; arthropod-borne viral fevers and viral hemorrhagic fevers; viral infections characterized by skin and mucosa lesions; viral hepatitis; human immunodeficiency virus (HIV) diseases; other viral diseases; infections caused by fungi; mycoses; protozoal diseases; helminthiasis; pediculosis, acariasis and other infestations; sequelae of infectious and parasitic diseases; diseases caused by bacterial, viral and other infectious agents.

The length of stay to treat tuberculosis, for example, tends to be long (about twenty days), reinforcing the severity of the clinical situation of the patient, which may be aggravated by comorbidities, such as diabetes, kidney failure, HIV and delay in diagnosis⁶.

GRAPH 7 | Mean length of stay by age range (days) | 2019

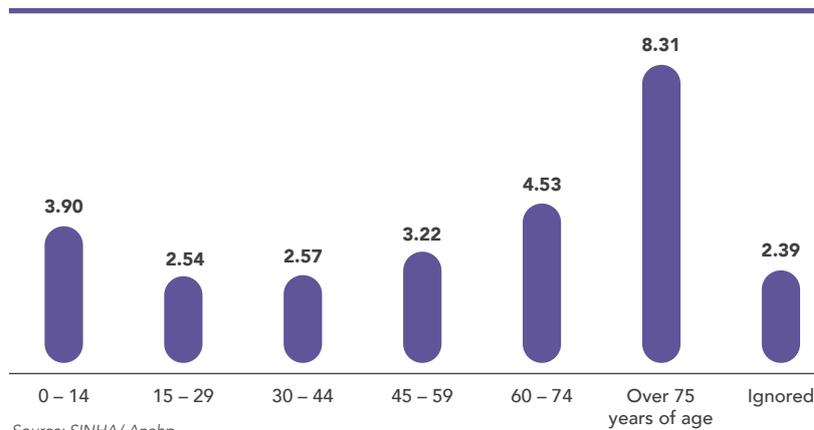


TABLE 5 | Mean length of stay (LOS) according to ICD-10 chapter | 2019

ICD-10 Chapter	2019	
	LOS	Grand Total
Respiratory	6.17	10.45%
Genitourinary	2.89	9.88%
Digestive	2.66	9.31%
Circulatory	5.39	8.50%
Pregnancy	2.36	7.13%
Neoplasm	4.38	7.07%
Osteomuscular	2.79	6.55%
Lesions and poisoning	3.52	5.86%
Infectious diseases	8.73	4.17%
Nervous system	4.65	1.94%
Endocrine	3.92	1.92%
Perinatal	8.33	1.89%
Skin	5.21	1.60%
Congenital	4.28	0.90%
Ear	4.24	0.88%
Mental	6.45	0.66%
Blood	5.18	0.57%
Eyes and adnexa	2.67	0.47%
Symptoms	4.33	11.24%
Factors	3.05	7.59%
No information	4.68	1.40%
Total		100.00%

Source: SINHA/ Anahp

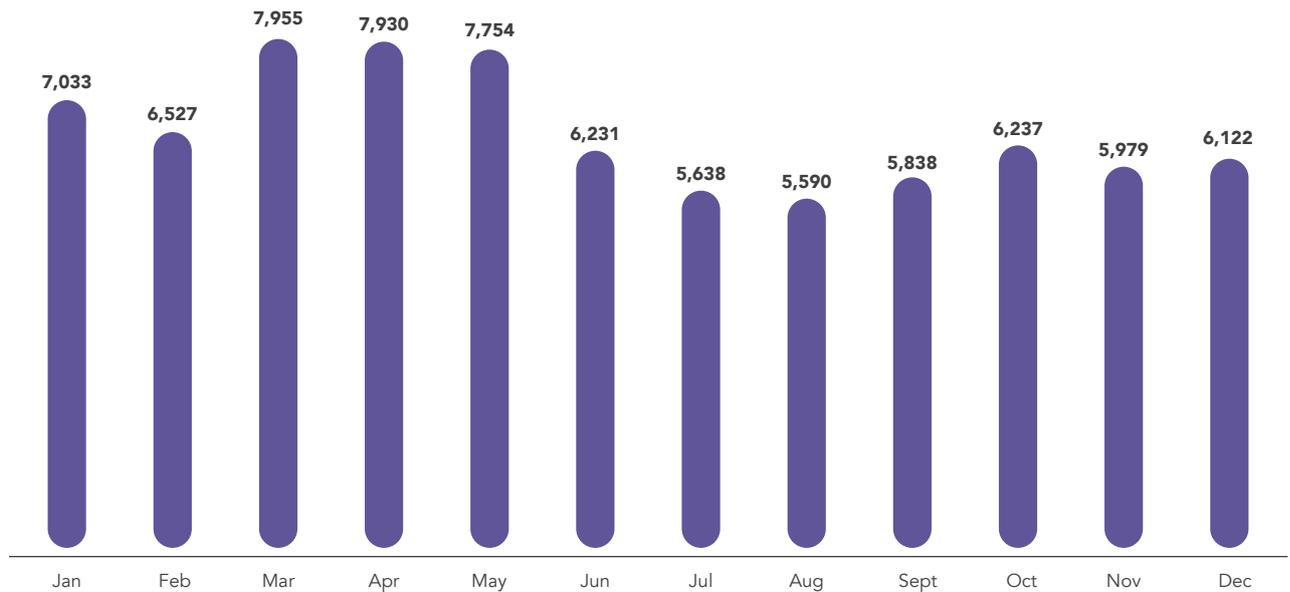
⁶ SILVA, D. R.; SILVA, L. P.; DALCIN, P. T. R. “Tuberculose em pacientes hospitalizados: características clínicas dos pacientes que iniciaram tratamento nas primeiras 24 h de permanência hospitalar”. In: *Jornal Brasileiro de Pneumologia*. São Paulo, v. 40, n. 3, p. 279-285, 2014. Available on: <doi.org/10.1590/S1806-37132014000300011>; accessed on 8/04/2020.

Upon analyzing the hospital discharges by infectious diseases, per month, there are more cases in March, April and May (**Graph 8**).

Dengue fever, for example, is an infectious disease caused by virus, with seasonal dynamics normally

associated with changes and fluctuations to weather conditions, such as increase in temperature, rainfall, air relative humidity, which favor the development of mosquitos breeding sites. Epidemic waves are normally concentrated from April to June⁷.

GRAPH 8 | Hospital discharge due to infectious diseases by month | 2019



Source: SINHA/ Anahp



⁷ RIBEIRO, A. F.; MARQUES, G. R. A. M.; VOLTOLINI, J. C.; CONDINO, M. L. F. "Associação entre incidência de dengue e variáveis climáticas". In: Revista de Saúde Pública, v. 40, p. 671-676, 2006. Available on: <doi.org/10.1590/S0034-89102006000500017>; Accessed on 18/04/2020.

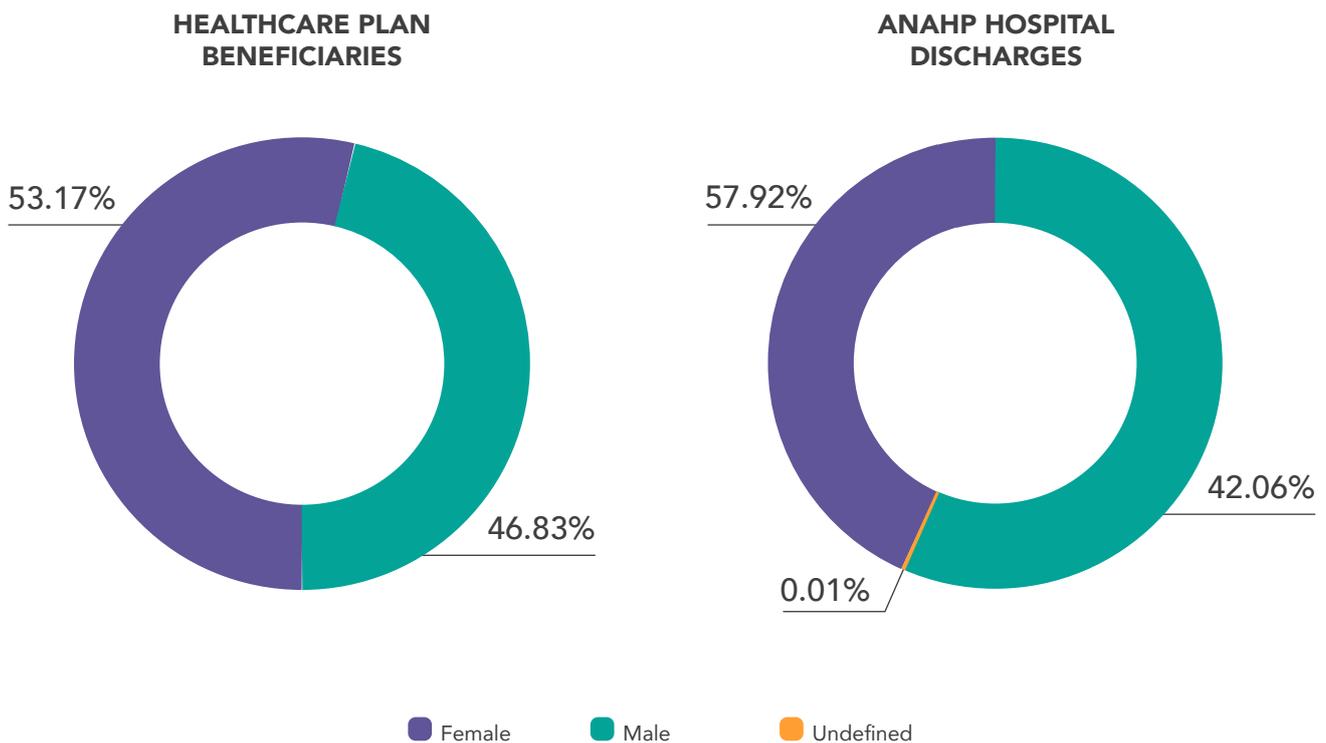
Concerning patients' gender, in 2019, among private healthcare plan beneficiaries, 53.17% were female and 46.83% were male.

Among Anahp hospitals, the same trend is observed: 57.92% of the total hospital discharges were of female patients against 42.06% of male patients and 0.01% of not informed or not defined gender **(Graph 9)**.

There was predominance of classified discharges in the age range 30 to 44 years, about 25% of the total. When we classify by gender, 17.06% are women in the same age range (in the range where there are more women). Men are more predominant in the age range 0 to 14 years **(Graph 10)**.



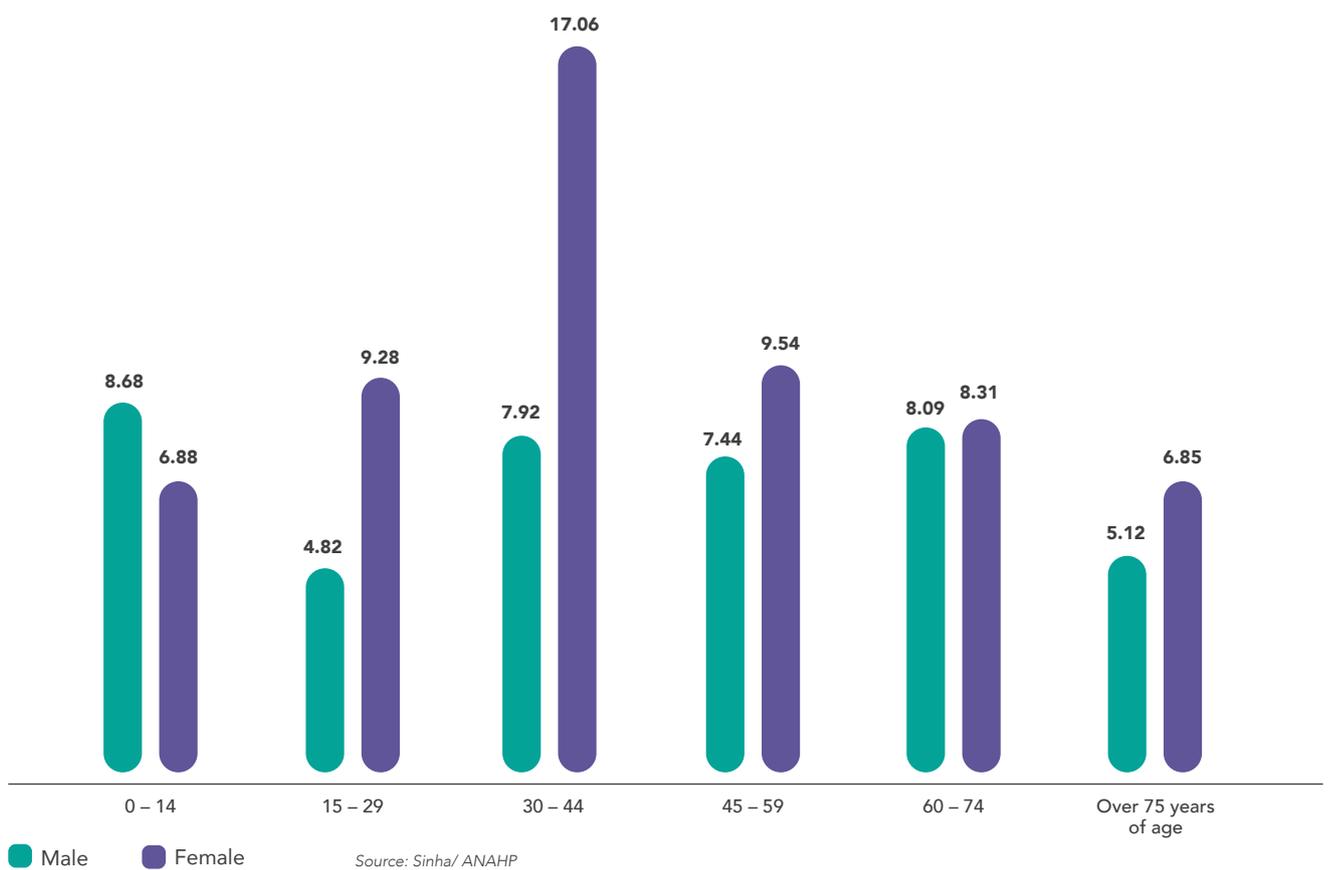
GRAPH 9 | Comparison of distribution of patients by gender among healthcare plan beneficiaries and hospital discharges from Anahp member hospitals | 2019



Source: Sinha/ ANAHP and ANS (accessed on 16/Mar/20200. It does not include health plan companies providing dental plans only.



GRAPH 10 | Hospital discharges by gender and age range (%) | 2019



It is important to observe the outcome of these discharges: in 82.63% of the cases, the discharge led to improved patients sent home; administrative discharge (evasion, external transfer or requested by patients) amounted to 1.61% of the total, and 1.51% had negative outcomes/ death.

The highest incidence of negative outcomes was among discharges due to neoplasm, leading to 0.29%

of the total deaths (**Table 6**).

In view of the importance of properly completing the information in the patient medical records, there is still room for improvement, as 1.40% of the total discharges did not state the reason for it and 19% were classified as symptoms and factors, that is, it was not possible to identify the specific reason for the hospital admission.

TABLE 6 | Type of hospital discharge according to ICD-10 chapter | 2019

ICD-10 Chapter	2019				Grand Total
	Discharge - Death	Discharge - improved	Administrative discharge	Not informed	
Respiratory	0.24%	7.36%	0.10%	2.76%	10.45%
Genitourinary	0.06%	8.98%	0.11%	0.73%	9.88%
Digestive	0.07%	8.55%	0.12%	0.57%	9.31%
Circulatory	0.25%	7.55%	0.16%	0.55%	8.50%
Pregnancy	0.00%	6.76%	0.03%	0.34%	7.13%
Neoplasm	0.29%	6.26%	0.15%	0.37%	7.07%
Osteomuscular	0.01%	5.36%	0.06%	1.13%	6.55%
Lesions and poisoning	0.04%	4.46%	0.08%	1.27%	5.86%
Infectious diseases	0.18%	2.58%	0.05%	1.36%	4.17%
Nervous system	0.02%	1.70%	0.04%	0.19%	1.94%
Endocrine	0.02%	1.79%	0.03%	0.09%	1.92%
Perinatal	0.02%	1.71%	0.11%	0.05%	1.89%
Skin	0.01%	1.21%	0.02%	0.36%	1.60%
Congenital	0.02%	0.83%	0.02%	0.04%	0.90%
Ear	0.00%	0.56%	0.01%	0.31%	0.88%
Mental	0.01%	0.45%	0.03%	0.17%	0.66%
Blood	0.01%	0.48%	0.02%	0.06%	0.57%
Eyes and adnexa	0.00%	0.41%	0.00%	0.06%	0.47%
Symptoms	0.19%	7.59%	0.20%	3.26%	11.24%
Factors	0.06%	6.83%	0.21%	0.49%	7.59%
No information	0.01%	1.19%	0.09%	0.11%	1.40%
Total	1.51%	82.63%	1.61%	14.25%	100.00%



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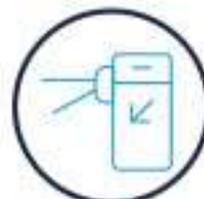
LIMPEZA



JARDINAGEM



MANUTENÇÃO



PORTARIA E RECEPÇÃO



SEGURANÇA PATRIMONIAL

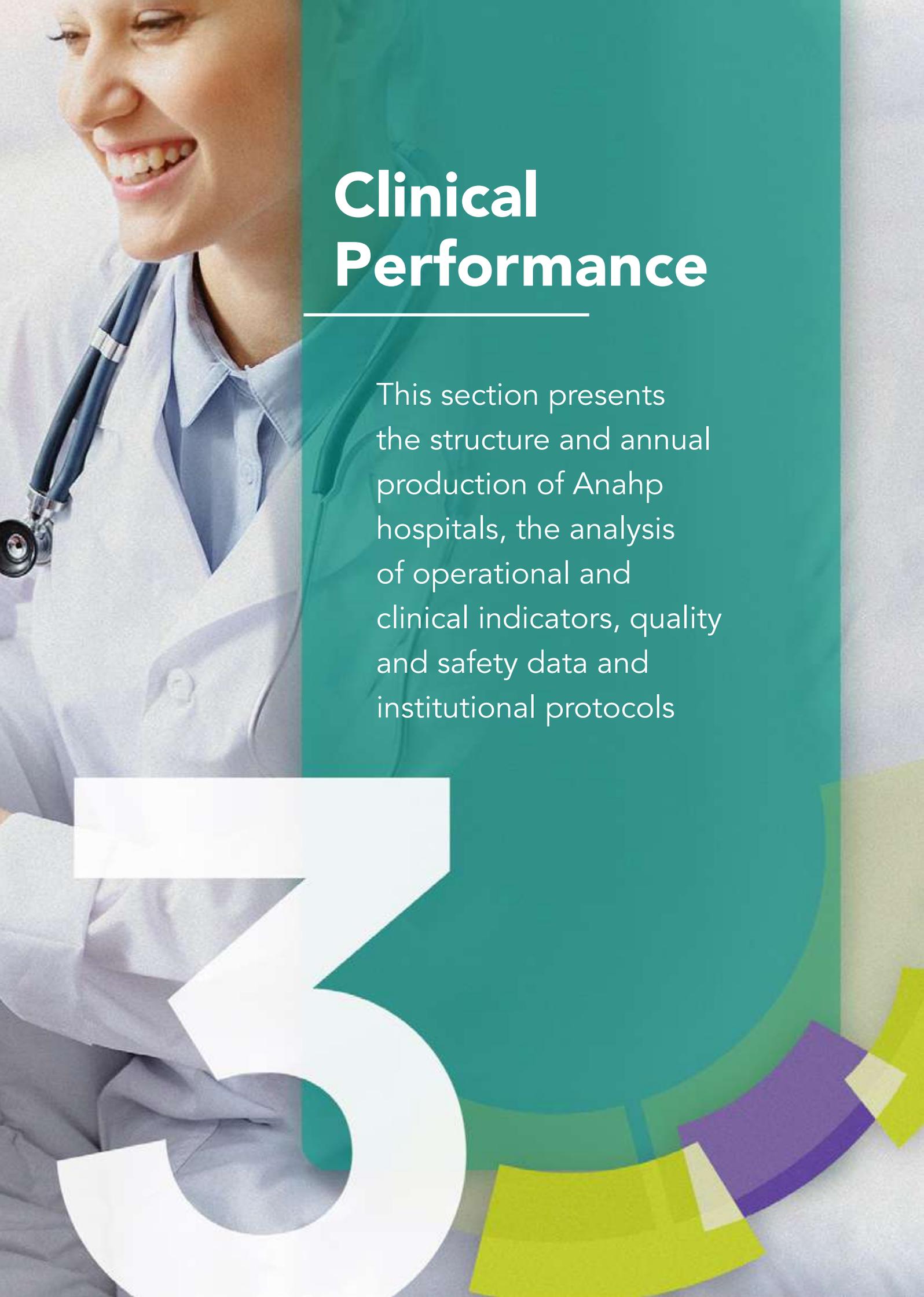


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Clinical Performance

This section presents the structure and annual production of Anahp hospitals, the analysis of operational and clinical indicators, quality and safety data and institutional protocols

Executive Summary

ANAHP MEMBERS ARE HIGH COMPLEXITY HOSPITALS

67.23%

of Anahp hospitals are large-sized and special organizations



small and medium-sized organizations

DIAGNOSTIC AND THERAPEUTIC SUPPORT



Clinical analysis laboratory

96.67%



Chemotherapy services

83.33%



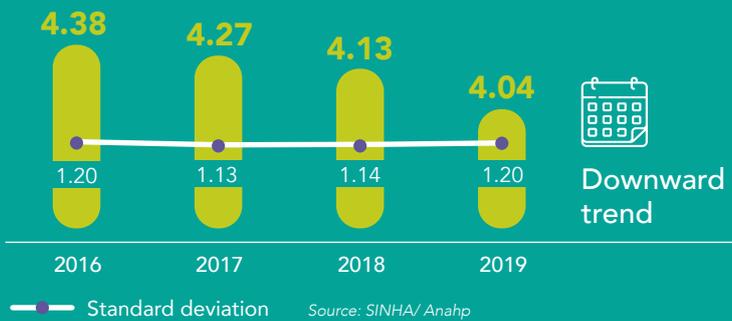
Radiotherapy

28.89%

Source: SINHA/ Anahp

OPERATIONAL INDICATORS

MEAN LENGTH OF STAY (DAYS)



MORTALITY RATE (%)



GENERAL OPERATIONAL OCCUPANCY RATE (%)

It has been stable for some years



CLINICAL QUALITY AND SAFETY INDICATORS

Incidence density of central line-associated bloodstream infection



ADULT ICU (%)

2.61
2018 **▶ 1.96**
2019



NEONATAL ICU (%)

4.87
2018 **▶ 4.65**
2019



STEP-DOWN UNIT (%)

1.56
2018 **▶ 2.00**
2019



PEDIATRIC ICU (%)

1.75
2018 **▶ 1.61**
2019

INSTITUTIONAL PROTOCOLS

Selected pathologies	Indicators	2019	Parameters	
Acute myocardial infarction	Door-to-Balloon Time Median time (minutes)	61.19	90	American Heart Association
Ischemic stroke	Door-to-Report time Median Time (minutes)	38.40	<45	American Stroke Association
	Door-to-Venous Thrombolysis Median Time (minutes)	34.70	<60	American Stroke Association

Source: SINHA/ Anahp

HOME CARE

MEAN LENGTH OF STAY OF PATIENTS IN HOME CARE (DAYS)



DISCHARGE RATE OF PATIENTS IN HOME CARE (%)



— Standard deviation

Source: SINHA/ Anahp

CLINICAL PERFORMANCE

Structure and annual production

92.44% of Anahp
hospitals have at
least one certificate
of excellence





67.23% of Anahp hospitals are large-sized or special organizations

This chapter was developed based on the database of Anahp annual questionnaires, including 90 respondent hospitals in 2019, that is, 75.63% of the total member hospitals.

Anahp hospitals have a heterogeneous structure, including general and specialized hospitals, with and without maternity and most of them perform urgency/emergency care. In this chapter, we describe the main characteristics of the sample concerning service provision.

In 2019, Anahp had 119 member hospitals and 92.44% of them had at least one certificate of excellence.

2019 Structure

The definition of hospitals by size according to the Ministry of Health:

- **Small-sized hospital:**
Hospital that has installed capacity of up to 50 beds;
- **Medium-sized hospital:**
Hospital that has installed capacity between 51 and 150 beds;
- **Large-sized hospital:**
Hospital that has installed capacity between 51 and 500 beds;
- **Special hospital:**
Hospital that has installed capacity over 500 beds.

Based on this classification, in 2019, 67.23% of Anahp hospitals were large-sized or special organizations, that is, they operate with more complex clinical structure.

Among the member hospitals that answered the questionnaire, 52.22% of them have maternity and the same percentage see high-risk pregnant patients.

Moreover, in 87.78% of the hospitals there are outpatient units, totaling over 2,768 medical offices (Table 1).

TABLE 1 | Outpatient Units

	2019
Organizations that have outpatient units	87.88%
Number of medical offices	2.768

Source: SINHA/ Anahp



52.22%
of the member hospitals have maternity and the same percentage see high-risk pregnant patients

The diagnostic support infrastructure at Anahp hospital is very robust:

- 94.44% of the hospitals carry out Computed Tomography (CT) Scans, and 78.89% of them have a CT scan machine at the facility. The production to external patients (outpatients) is predominant, totalling 2.5 million tests, divided into 1.58 million outpatient tests (patients from Emergency Department or pre-scheduled) and 920,280 inpatient tests.
- 84.44% of Anahp hospitals perform Magnetic Resonance Imaging (MRI) and 71.11% have an MRI machine at the facility. The production exceeded 1 million tests, broken down as 838,800 outpatient images (patients from Emergency Department and pre-scheduled) and 182,560 were images for inpatients (**Table 2**).
- 96.67% of the respondent hospitals offer clinical laboratory tests, 83.33% perform chemotherapy and only 28.89% perform radiotherapy (**Table 3**).
- 53.33% of the respondent hospitals carried out a transplant procedure in 2019. A total of 2,870 transplants were performed in the period, primarily bone marrow and kidney transplants (**Table 4**). As to other transplant procedures, the most frequent ones were cornea and tissue.

TABLE 2 | Imaging services

	2019
CT scan	2,501,502
MRI	1,021,355

Source: SINHA/ Anahp

TABLE 3 | Diagnostic and therapeutic support

	2019
Clinical analysis laboratory	96.67%
Chemotherapy	83.33%
Radiotherapy	28.89%

Source: SINHA/ Anahp

TABLE 4 | Performance of transplants

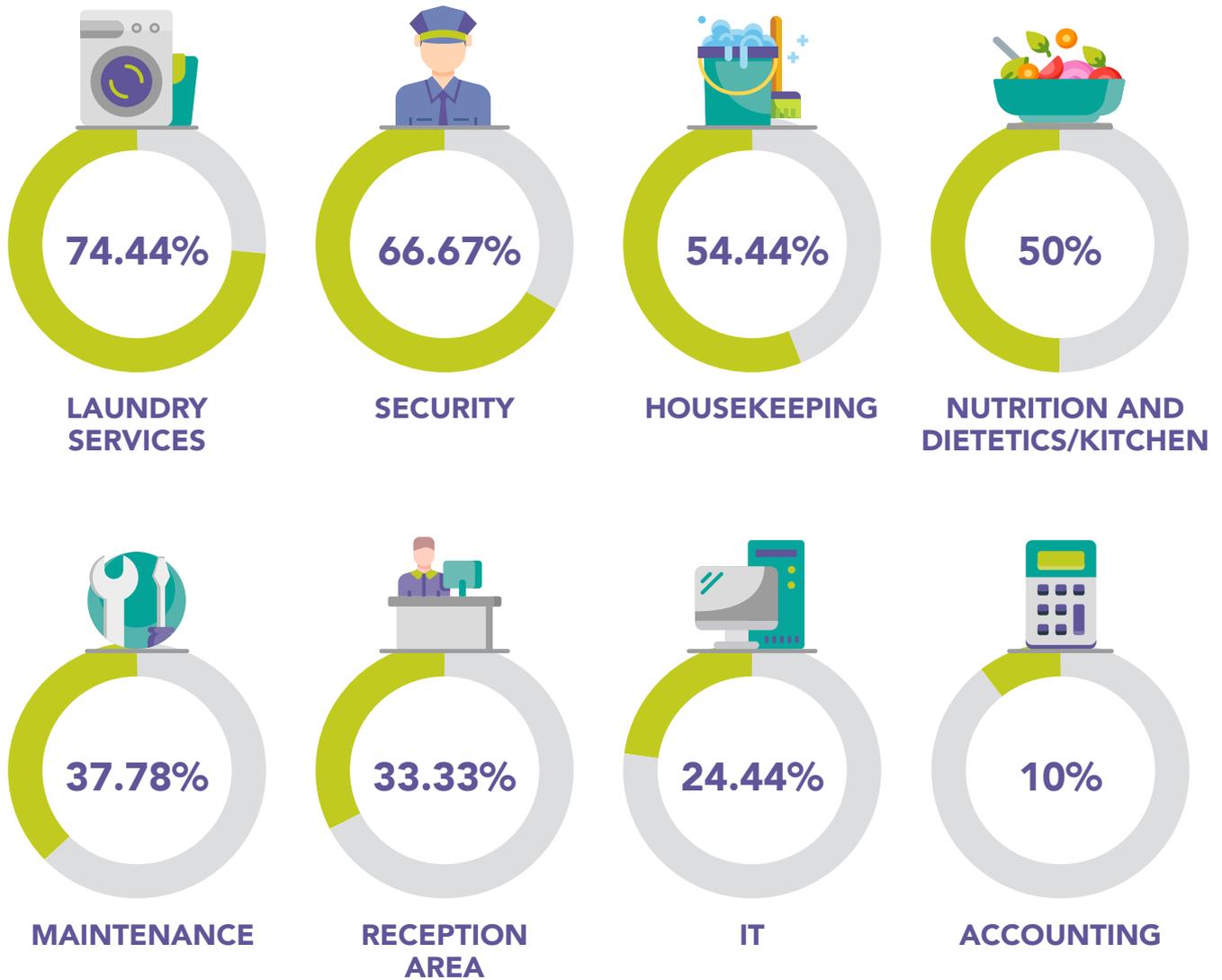
	2019
Organizations that perform transplants	53.33%
Bone marrow	1,026
Kidney	696
Liver	495
Pancreas	48
Heart	44
Others	565

Source: SINHA/ Anahp

The strategy of outsourcing services and support activities is common among Anahp member hospitals, as the numbers that follow show us.



Outsourced services | 2019



Source: SINHA/ Anahp

Compared to 2018, the percentage of outsourced services in information technology and accounting decreased: the former used to be 41.25% and the latter, 16.25%.

Compliance Structure

Considering the global market movement towards more transparency and ethical behaviors, in 2015 Anahp identified the need to contribute with the sector by sharing the experience of its member hospitals, benchmarking against internacional organizations and fostering a healthy discussion about compliance, a topic that has been addressed in practically all events of the organization since then.

Based on the strategic guidelines of the Board of Directors of Anahp that encourages the adoption of best practices in compliance, the first edition of Corporate Compliance Code for Private Hospitals was designed as a guiding document for the development of a

comprehensive Code of Conduct, providing to hospital organizations the support to recognize and trust their initiatives to encourage transparent market practices.

In that year, Anahp created its Compliance Strategic Committee to propose strategies, policies, rules, and procedures directed to disseminating and adopting a culture of compliance at corporate and clinical levels of healthcare organizations.

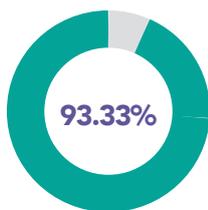
In 2018, when discussions on the topic had become more robust and there was an essential understanding about the importance of having compliance programs in the organizations, the Compliance Strategic Committee took an

important step forward by launching Anahp Code of Conduct of Member Hospitals, which was different from previous versions that encouraged organizations to create a code of conduct and compliace programs. The new document provided the minimum required standards for ethical behaviors expected of member organizations.

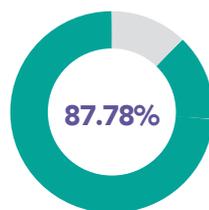
To carry on with the work, in 2018 Anahp proposed the development of some simple quantitative indicators that evidenced the progression of member hospitals in their compliance initiatives.

In 2019, the same survey was applied and the following information was learned about the member hospitals:

Compliance | 2019



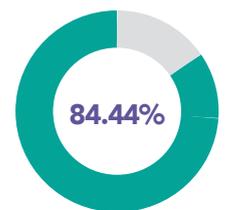
of hospitals have a code of conduct



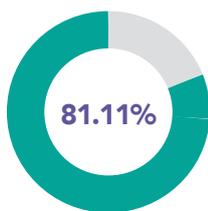
of the organizations have an ethics and compliance committee



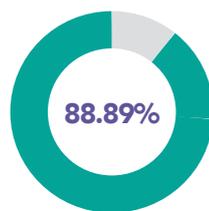
have a compliance officer or department/area



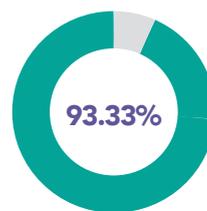
of the organizations know their main critical ethical and compliance topics



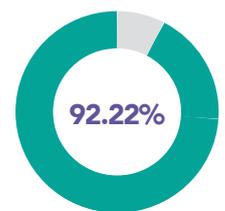
of the hospitals educate and communicate their staff about ethical and compliance topics



of the organizations have a report channel dedicated to ethical issues



of the organizations have policies and rules that include administrative consequences and/or disciplinary measures in case of violation of laws or rules of conduct



of the hospitals have independent internal audit that reviews and recommends improvement actions for internal controls

Operational management

The occupancy rate of Anahp hospitals has had a slight variation in recent years





In a scenario that is still challenging, the use of best practices is fundamental to assure good results in care delivery

With aim of setting references for continuing improvement in healthcare organizations, since 2007, Anahp has been collecting indicators related to care delivery performance, which provide an assessment of efficiency in the management of operating beds, productivity, and effectiveness of care delivery.

Generally speaking, in recent years, a falling trend may be noted in the occupancy rate and average length of stay, at same time as there is an increase in bed turnover.

As in previous years, through many meetings focused on benchmarking and aligning operational practices, Anahp offered experience sharing to member hospitals, which has contributed to keep standards and operational indicators suitable to their organizations in 2019.

Operational indicators

The analyses that follow show the evolution of general operational management indicators. It is also possible to analyze them by each of Brazil's region. Next, we present the indicators per sector of activity, intensive care units – adult ICU, pediatric ICU, neonatal ICU, and step-down unit.

The operational management indicators of Anahp Integrated System of Hospital Indicators (SINHA) were calculated based on data of 109 responding hospitals in 2019 (Table 1).



TABLE 1 | Annual summary of operational indicators

Indicator	2016	2017	2018	2019	Standard deviation 2019
Occupancy rate	76.94%	76.85%	76.44%	76.96%	8.77%
Number of members that have a health plan	47.626.839	47.088.080	47.100.199	47.039.728	-
Average length of stay (days)	4.38	4.27	4.13	4.04	1.20
Turnover rate (times)	5.33	5.34	5.62	5.85	1.78
Replacement interval (days)	1.34	1.32	1.36	1.27	0.64
Conversion rate (admissions over the total ED encounters)	6.93%	8.15%	8.55%	8.29%	4.13%
Rate of admissions through urgency/emergency (in relation to total hospital discharges)	40.94%	41.93%	43.21%	44.74%	14.94%
Organizational mortality rate	2.35%	2.28%	2.14%	2.16%	1.29%
Organizational mortality rate ≥ 24h	2.05%	2.12%	1.98%	1.88%	1.12%
Rate of patients staying in the hospital > 90 days	0.60%	0.58%	0.47%	0.45%	0.51%

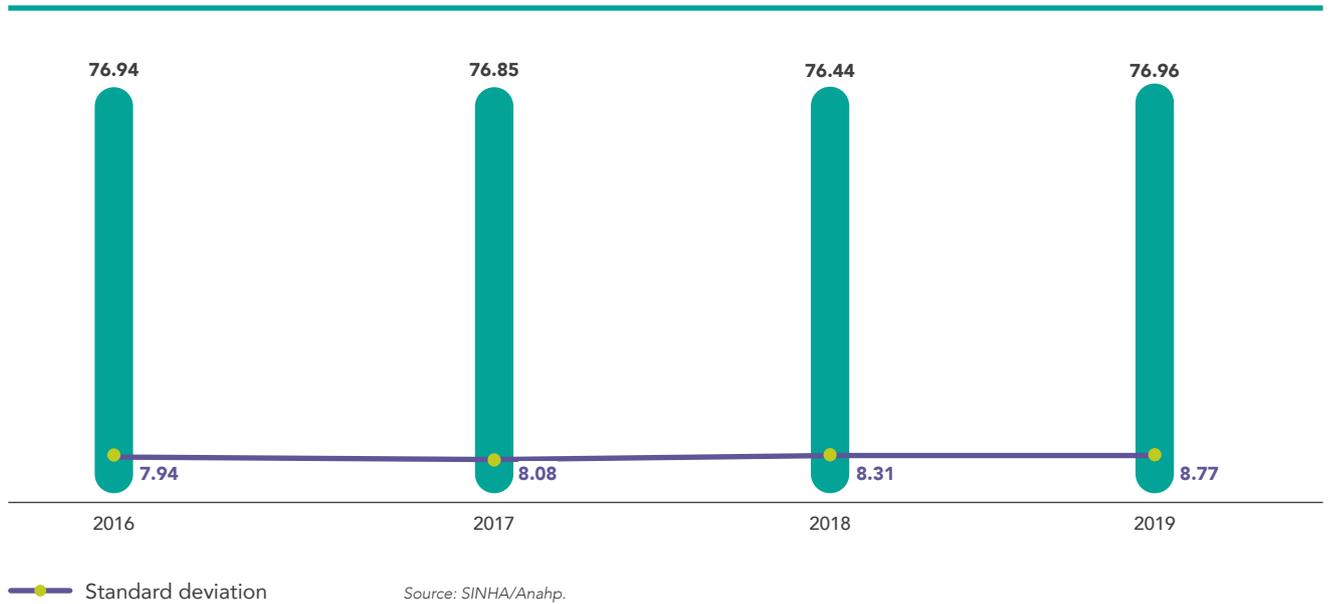
In recent years, the occupancy rate was above 75%, getting to 76.96% in 2019 (Graph 1).

The number of members that have medical-hospital plans, despite its improvement last year, is still very weak, as well as the recovery of Brazilian economy (Graph 2).

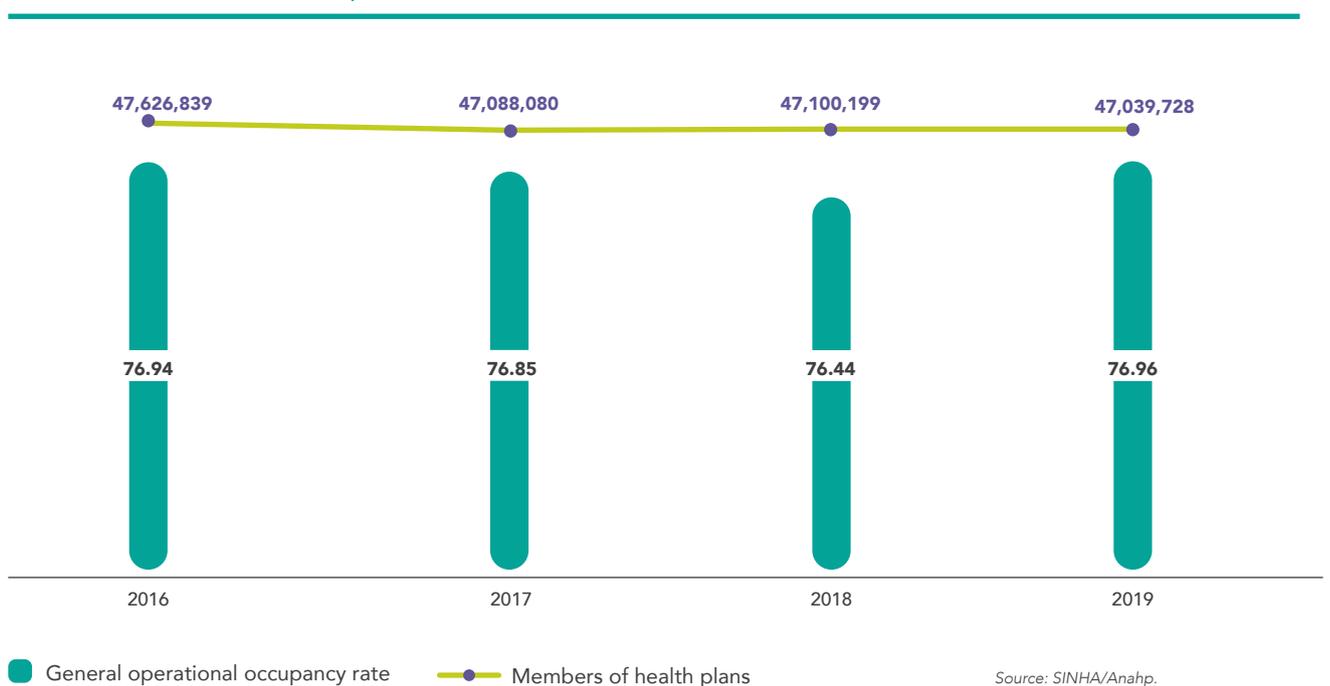


Downward trend in average length of stay, with higher turnover rate

GRAPH 1 | General operational occupancy rate (%)



GRAPH 2 | General operational occupancy rate (%) vs. number of health plan members



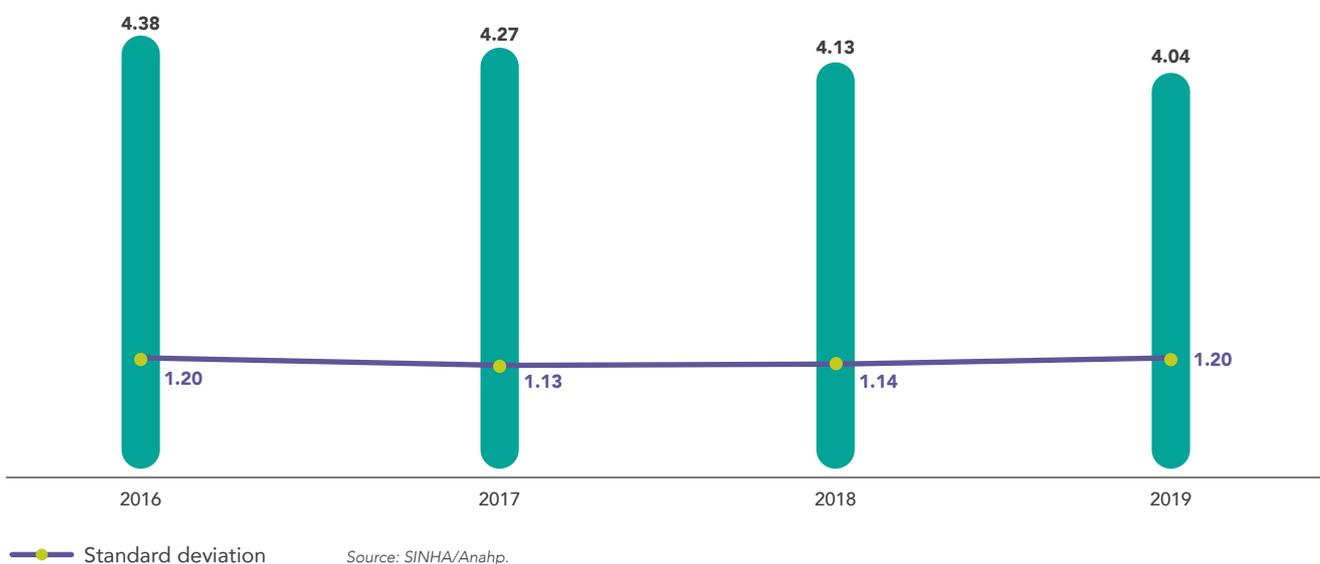
The overall average length of stay has kept a downward trend, going from 4.38 days in 2016 to 4.04 days in 2019 (Graph 3). Consequently, turnover rate, which measures each bed’s monthly admission capacity, increased from 5.33 times in 2016 to 5.85 times in 2019, on average.

In turn, replacement interval, which shows the average time a bed remains unoccupied between one patient’s discharge and another patient’s admission, went from 1.34 days in 2016 to 1.27 days in 2019. The emergency department (ED) is the main

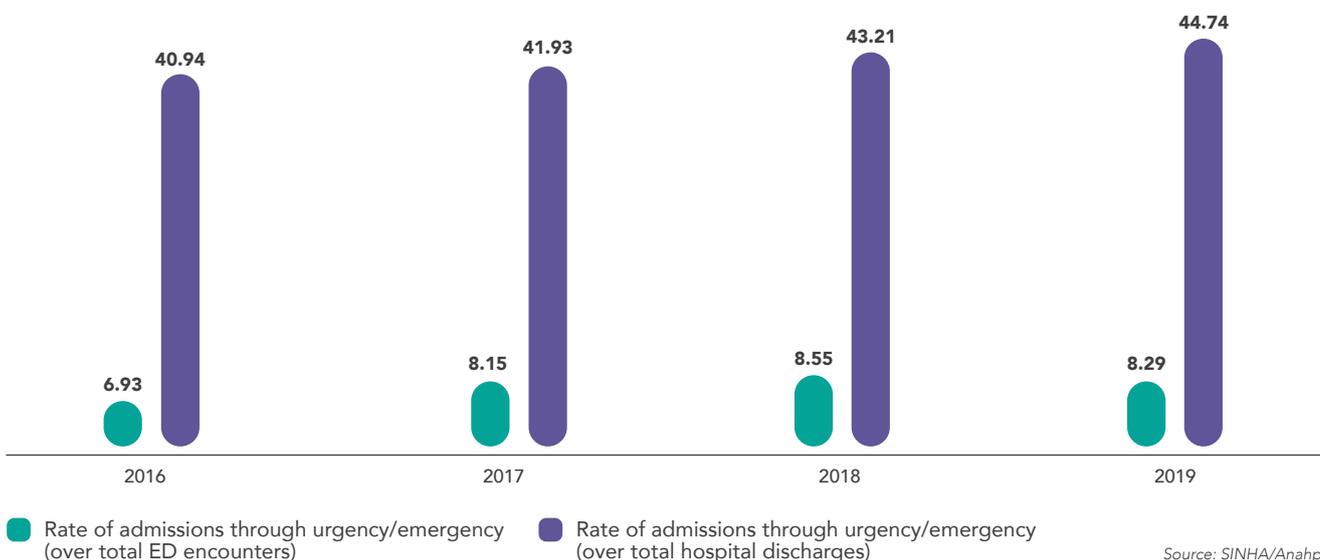
gateway for medical patients and, for this reason, it is important to evaluate how many ED encounters are converted into hospital admissions.

In 2019, the weight of admissions through the emergency department (ED) over total hospital discharges was 44.74%. This upward trend in recent years can also be seen when one analyzes the weight of total admissions through the emergency department over total encounters in the emergency department, which has also been increasing, going from 6.93% in 2016 to 8.29% in 2019 (Graph 4).

GRAPH 3 | Average length of stay in Anahp hospitals (days)



GRAPH 4 | Admissions through the ED (%)



Mortality rates have had a falling trend in recent years, confirming Anahp’s assumption of dissemination of good practices and quality improvement.

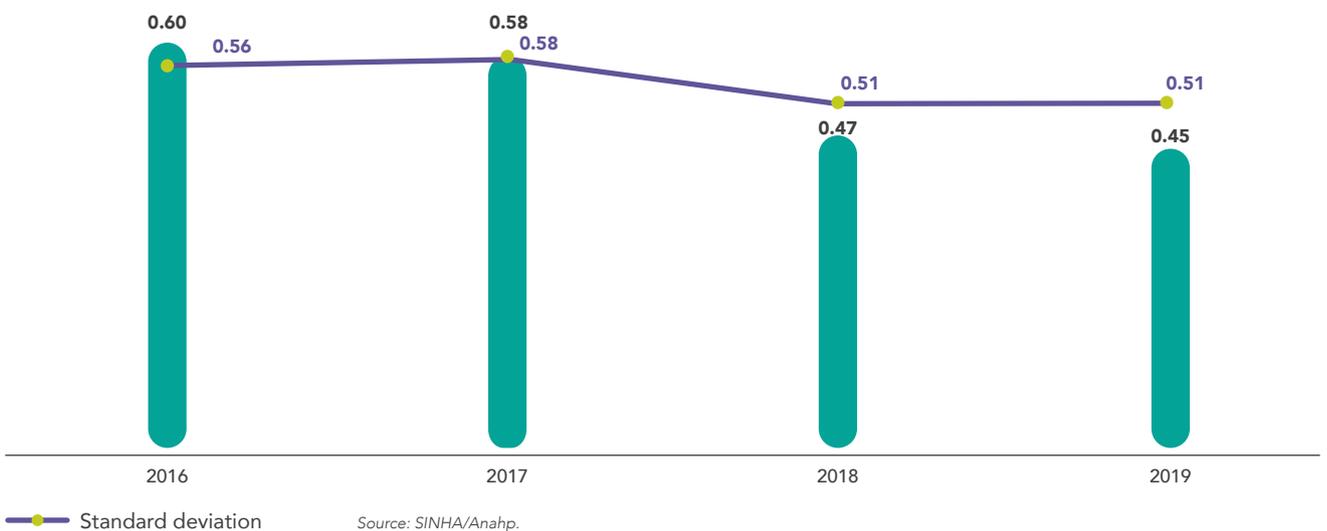
In 2019, the institutional mortality rate regardless of length of stay was 2.16%, whereas the institutional mortality rate for a period greater than or equal to 24 hours after hospital admission was 1.88% (Graph 5). There was also a decline in the rate of long-stay patients (more than 90 days), which was 0.45% in 2019, attesting the continuing efforts for good de-hospitalization practices (Graph 6).

The weight of admissions through the emergency department presented a growing trend in 2019

GRAPH 5 | Mortality rate (%)



GRAPH 6 | Long-stay patients > 90 days (%)



It is possible to analyze operational indicators by region of the country. **Table 2** shows that the Southeast region is the one with highest number of health plan members, and Anahp hospitals had an occupancy rate of 77.72% in 2019. Another highlight is the entry of new beneficiaries in regions outside the South-Southeast axis, like regions North and Center-West together, where occupancy rate was higher – 79.93% in the same year.

In these regions (North and Center-West), the average length of stay was lower (3.31 days in 2019), which enabled the highest bed turnover in the country – 7.07 times, on average, in 2019.

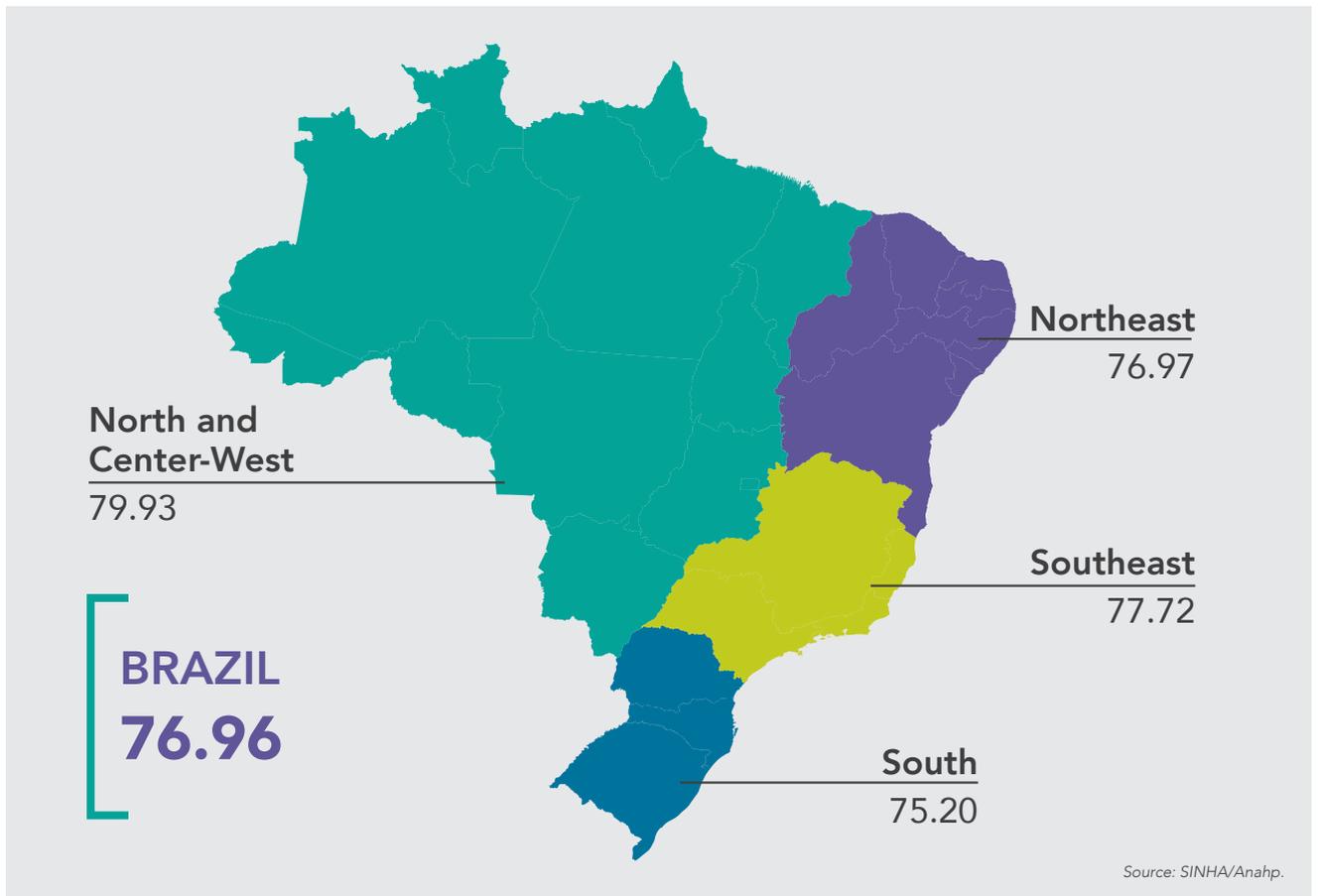


Regions outside the South-Southeast axis stand out for new beneficiaries

TABLE 2 | Regional operational indicators

Indicator					
	South	Southeast	Northeast	North and Center-West	Brazil
Occupancy rate	75.20%	77.72%	76.97%	79.93%	76.96%
Number of members that have a health plan	6,872,911	28,658,511	6,591,551	4,885,320	47,039,728
Average length of stay (days)	4.10	4.00	4.54	3.31	4.04
Turnover rate (times)	5.21	5.78	5.18	7.07	5.85
Replacement interval rate (days)	1.34	1.22	1.42	0.95	1.27
Conversion rate (admissions over total ED encounters)	9.60%	8.17%	8.64%	5.47%	8.29%
Rate of admissions through urgency/emergency (over total hospital discharges)	42.52%	45.22%	40.81%	42.95%	44.74%
Institutional mortality rate	2.94%	1.81%	2.51%	1.82%	2.16%
Institutional mortality rate ≥ 24h	2.41%	1.53%	2.27%	1.92%	1.88%
Rate of patients staying in the hospital > 90 days	0.35%	0.50%	0.44%	0.22%	0.45%

FIGURE 1 | Occupancy rate of Anahp hospitals in Brazil (%) | 2019



Anahp hospitals are in constant pursuit for state-of-the-art technological solutions to meet the efficiency and quality requirements imposed by the private health market.

In that sense, Anahp members are regarded as reference organizations for several surgical procedures, which partly explains the significant rate of surgeries per patient and the fact that 55.14% of the patients went through some surgical procedure during hospitalization in 2019 (Table 3).

Operative mortality rate was 0.30% in 2019, remaining stable along years (Graph 7).

Using the classification established by the American Society of Anesthesiologists (ASA), which groups individuals in anesthesia risk classes – minor (ASA I and II), medium (ASA III and IV) and major (ASA V and VI) –, it is possible to observe, in 2019, stability in the operative mortality rate in the group of ASA I and II, a reduction in the group of ASA III and IV, and an increase in the group of ASA V and VI, as compared to 2018.

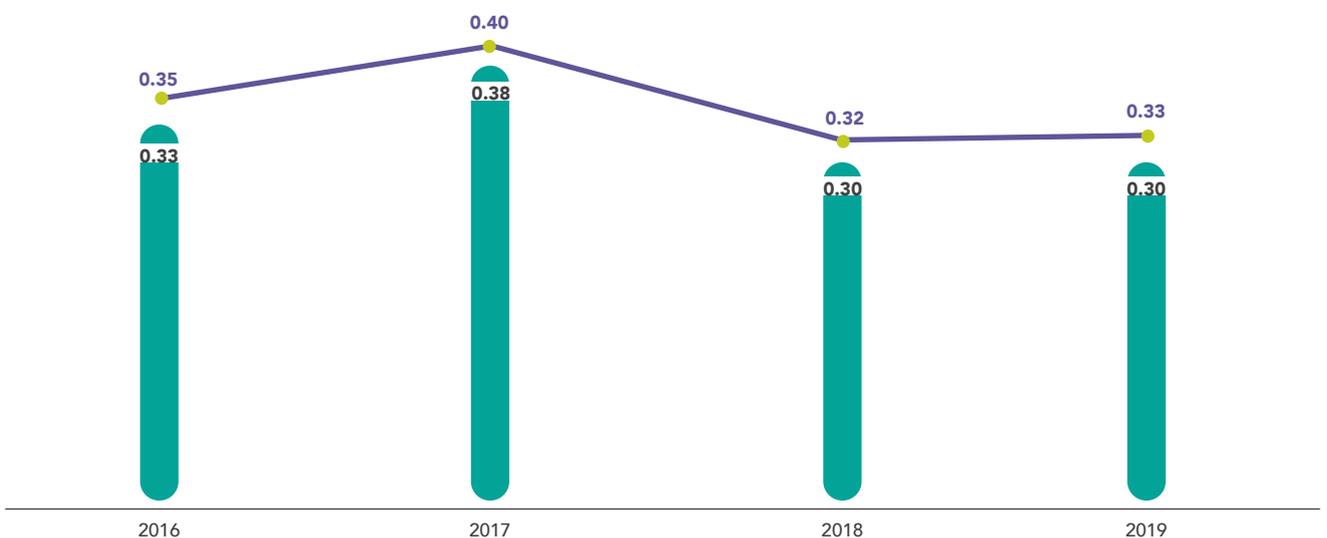
TABLE 3 | Operacional indicators

Indicator	2016	2017	2018	2019	Standard deviation 2019
Rate of patients undergoing surgical procedures	-	55.59%	57.96%	55.14%	17.19%
Rate of surgeries per patient	1.38	1.46	1.51	1.52	0.5
Operative mortality rate	0.33%	0.38%	0.30%	0.30%	0.33%
Operative mortality rate for ASA I and II	0.06%	0.06%	0.05%	0.04%	0.09%
Operative mortality rate for ASA III and IV	2.45%	2.73%	2.32%	2.07%	2.31%
Operative mortality rate for ASA V and VI	19.96%	10.22%	12.02%	20.01%	32.82%



In 2019,
55.14%
 of patients underwent
 some surgical
 procedure during
 their hospital stay

GRAPH 7 | Operative mortality (%)



Standard deviation

Source: SINHA/Anahp.

Operational indicators – intensive care units

When considering intensive care units, adult ICUs presented a growing trend for bed occupancy rate and a reduction in the average length of stay, which had an impact on the increase of turnover rate, when comparing 2018 and 2019 (Table 4).

In that sense, step-down units had higher occupancy rate and lower average length of stay in 2019 when compared to 2018. Consequently, the turnover rate presented an upward trend in the same basis comparison (Table 5).



TABLE 4 | Operational indicators – adult ICU

Indicator	2016	2017	2018	2019	Standard deviation 2019
Occupancy rate	79.66%	79.82%	78.12%	79.33%	10.74%
Average length of stay (days)	5.25	5.51	6.78	5.53	3.75
Turnover rate (times)	4.79	4.46	4.28	4.82	2.13
Replacement interval rate (days)	1.55	1.58	1.94	1.48	1.32


TABLE 5 | Operational indicators – Step-down unit

Indicator	2016	2017	2018	2019	Standard deviation 2019
Occupancy rate	82.21%	85.17%	80.88%	83.32%	12.43%
Average length of stay (days)	6.35	7.24	7.83	5.85	2.72
Turnover rate (times)	4.05	3.93	3.80	4.12	1.63
Replacement interval rate (days)	1.66	1.09	1.42	1.19	0.83

Source: SINHA/Anahp.

In turn, the occupancy rate in pediatric ICUs was practically stable in 2019, when compared to 2018. The average length of stay was 6.29 days, with a turnover rate of 3.64 times in 2019 (Table 6).

The occupancy rate in neonatal ICUs went from 72.08% in 2018 to 69.70% in 2019, whereas the average length of stay went from 15.93 days in 2018 to 13.84 days in 2019. With this, the average turnover rate was 1.51 times in 2019 (Table 7).

TABLE 6 | Operational indicators – pediatric ICU

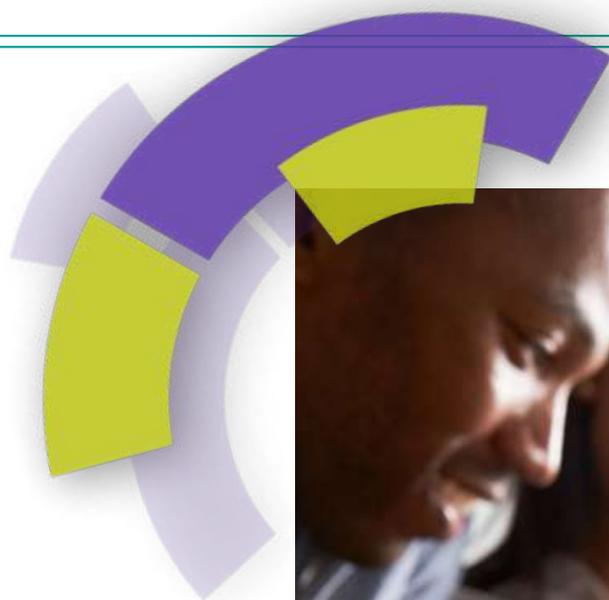
Indicator	2016	2017	2018	2019	Standard deviation 2019
Occupancy rate	71.47%	72.96%	73.17%	72.35%	13.16%
Average length of stay (days)	7.37	7.59	7.77	6.29	2.60
Turnover rate (times)	3.09	3.12	3.19	3.64	1.40
Replacement interval rate (days)	3.09	3.20	3.46	2.77	1.93

Source: SINHA/Anahp.

TABLE 7 | Operational indicators – neonatal ICU

Indicator	2016	2017	2018	2019	Standard deviation 2019
Occupancy rate	68.70%	75.59%	72.08%	69.70%	17.76%
Average length of stay (days)	14.02	13.23	15.93	13.84	5.82
Turnover rate (times)	1.58	1.71	1.45	1.51	0.62
Replacement interval rate (days)	6.66	5.49	7.67	6.81	5.49

Source: SINHA/Anahp.



As to specific indicators for maternity/neonatal care, **Table 8** shows that the occupancy rate of maternities was 67.33% in 2019. The average length of stay in the same year was 2.12 days, with turnover rate of 8.49 times

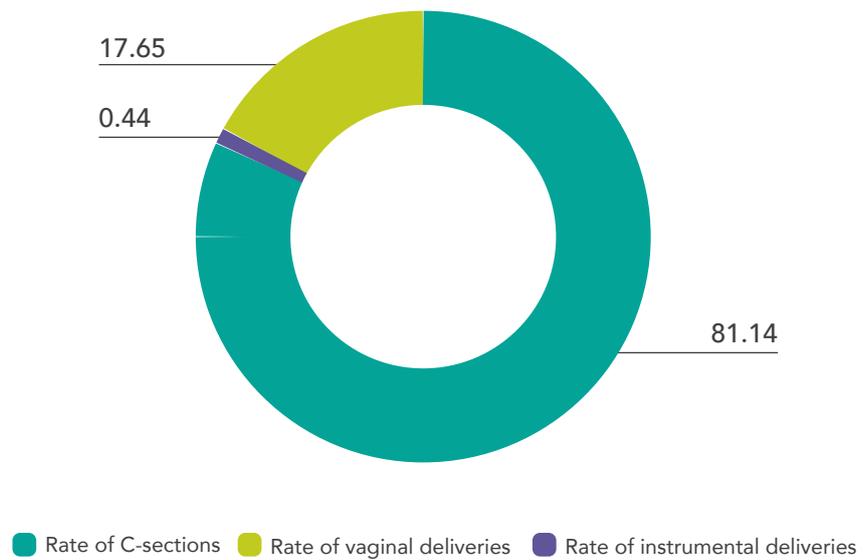
TABLE 8 | Operational indicators – Maternity/neonatal units

Indicator	2016	2017	2018	2019	Standard deviation 2019
Occupancy rate	69.43%	72.04%	67.65%	67.33%	13.36%
Average length of stay (days)	2.34	2.25	2.20	2.12	0.55
Turnover rate (times)	8.44	8.99	8.65	8.49	2.53
Replacement interval rate (days)	1.12	0.94	1.09	1.04	0.66

Source: SINHA/Anahp.

Among Anahp hospitals, almost 150.000 child deliveries were performed in 2019. Of those, about 81.58% were C-sections (including instrumental deliveries). Maternal death, according to the International Classification of Diseases and Health Related Problems, 10th revision (ICD-10), is a “death of a woman during pregnancy or up to 42 days after the end of gestation, regardless of its duration or location of the pregnancy, due to any cause related to or worsened by the pregnancy or by measures related to it, but not due to accidental or incidental causes”

GRAPH 8 | Childbirth profile (%)



Source: SINHA/Anahp.

TABLE 9 | Indicators – Maternity/neonatal units

Indicator	2017	2018	2019	Standard deviation 2019
Rate of C-sections	82.19%	82.49%	81.14%	11.70%
Rate of instrumental deliveries	0.43%	0.41%	0.44%	0.76%
Rate of vaginal deliveries	17.56%	17.22%	17.65%	11.03%
Neonatal mortality within 27 days (for every 1,000 live births)	2.56	3.30	3.90	3.13
Maternal mortality (for every 100,000 live births)	25.86	19.71	17.96	50.29

Source: SINHA/Anahp.

Data of the Ministry of Health¹ show that direct maternal mortality² in Brazil was estimated to be 64.50 in 2017. It is important to note that, historically, the identification of maternal deaths presents two problems: 1) underdiagnosing: when the death is reported with another cause; 2) underreporting: when the death is not reported. Among Anahp hospitals, maternal mortality

was 17.96 for every 1,000 live births in 2019.

Also, according to data of the Ministry of Health, early neonatal mortality³ in Brazil was estimated to be 7.20 in 2017. Late neonatal mortality⁴ in Brazil was estimated to be 2.30 in 2017. Among Anahp hospitals, neonatal mortality was 3.90 for every 1,000 live births in 2019.

¹ MINISTÉRIO DA SAÚDE. Saúde Brasil 2019: uma Análise da Situação de Saúde com Enfoque nas Doenças Imunopreveníveis e na Imunização. Brasília, 2019. Available at: <https://www.saude.gov.br/images/pdf/2019/dezembro/05/Saude-Brasil-2019-imunizacao.pdf>; accessed on 08/Apr/2020.

² Reason for maternal mortality defined as the o number of maternal deaths per 100,000 livre births of mother living in a certain geographical area, calculated without any correction factor.

³ Defined as “(number of deaths of residents from 0 to 6 days of life ÷ number of live births from resident mothers) × 1,000” (Ministério da Saúde. Saúde Brasil 2019: uma Análise da Situação de Saúde com Enfoque nas Doenças Imunopreveníveis e na Imunização, op. cit., p. 37).

⁴ Defined as “(number of deaths of residents from 7 to 27 days of life ÷ number of live births from resident mothers) × 1,000” (Ministério da Saúde. Saúde Brasil 2019: uma Análise da Situação de Saúde com Enfoque nas Doenças Imunopreveníveis e na Imunização, op. cit., p. 37).

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Quality and safety in care delivery

Patient-centered care is the main concern of hospitals when it comes to quality and safety in care delivery

Monitoring care-related adverse events is essential for the implementation of measures that benefit patients



For years, Anahp and its members have been seeking to improve the quality of care delivery and to turn hospitals into safer environments. This is an agenda that coincides with Anahp's history and purpose since its creation in 2001.

The pursuit for transparency in processes and patient safety are themes that have guided the discussions and concerns of the sector during the year.

Like in previous years, Anahp hospitals worked to prevent pressure ulcers and healthcare-associated infections, for safety in medication prescription, and to increase barriers to assure surgical safety.

Considering that in 2017, safety indicators underwent extensive revision and adaption in the

Brazilian literature – with the publications of the National Health Surveillance Agency (Anvisa) – and international literature – with the publications of the Joint Commission International (JCI) – these indicators will be presented starting in that year.

Moreover, through its Work Groups, Anahp makes available a series of protocols and handbooks that contribute significantly to the safety and quality of patient care, standardizing best practices that are frequently revisited and updated by the groups.

Quality and safety indicators are presented in this chapter, and it is important to note that standard deviations may be high because of the heterogenous features of Anahp hospitals.

Safety indicators

The patient safety system has the purpose of reducing patient damage as something strategic in the organization, aiming at improving both care and operational efficiency. With this goal, Anahp hospitals seek external directions and evaluations to guide internal processes and to learn best practices.

The past few years, many Anahp member hospitals have won more than one certification, both for the hospital and for certain clinical care programs.

Organizations may be accredited by one or more system, either Brazilian – National Accreditation Organization (ONA) – or international – Qmentum International Accreditation Program,

Joint Commission International (JCI), or National Integrated Accreditation for Healthcare Organizations (NIAHO).

In private health, in turn, several quality and transparency improvement initiatives may be noted, for example the creation of the table for Information Exchange in Private Health (TISS).

Patient safety is also increasingly more important in Brazil. In 2013, the Ministry of Health launched the National Patient Safety Program with aim of monitoring and preventing damages associated to health care, for application and inspection of rules and protocols that prevent failures in care delivery. The data assessed include prevention of

pressure ulcers, prescription safety, medication administration and use, prevention of healthcare-associated infections, safe surgery, and fall prevention.

For years, Anvisa has considered mandatory the monitoring and submission of data on healthcare-associated infections. In 2017, the agency updated the criteria for the monitoring and handling of hospital materials with the aim of mitigating this type of harm to patients.

In the same year, Anahp hospitals adapted the specifications of the indicators proposed by Anahp Integrated System of Hospital Indicators (SINHA) to market requirements and to Anvisa's criteria.



Many Anahp members have more than one certification model, both for their hospitals and for certain clinical care programs

The indicators monitored by Anahp include the incidence density of central line-associated bloodstream infections in intensive care units (ICU) (Table 1).

According to Anvisa's data¹, the incidence density of laboratory-confirmed primary bloodstream infections associated to the use of central lines in adult ICUs was

4.10 for every 1,000 patient-days in 2018. In the neonatal ICU, this number was 7.50 for every 1,000 patient-days, while in the pediatric ICU, it was 4.60 for every 1,000 patient-days in the same year.

Among Anahp hospitals, the incidence density of central line-associated bloodstream infection in the adult ICU has been dropping

in the past three years, and has reached 1.96 for every 1,000 patient-days in 2019. In neonatal ICUs, this number was 4.65 for every 1,000 patient-days, whereas in pediatric ICUs, it was 1.61 for every 1,000 patient-days in the same year. In step-down units, this number was 2 for every 1,000 patient-days in 2019.

TABLE 1 | Central line associated bloodstream infections in Anahp hospitals

Indicator	2017	2018	2019	Standard deviation 2019
Incidence density of central line-associated bloodstream infection – adult ICU	2.84%	2.61%	1.96%	2.69%
Utilization rate of central lines – adult ICU	49.56%	49.27%	49.20%	18.39%
Incidence density of central line-associated bloodstream infection – neonatal ICU	4.78%	4.87%	4.65%	7.29%
Utilization rate of central lines – neonatal ICU	29.20%	30.16%	31.06%	18.73%
Incidence density of central line-associated bloodstream infection pediatric ICU	1.48%	1.75%	1.61%	3.26%
Utilization rate of central lines – pediatric ICU	46.47%	43.64%	43.83%	21.60%
Incidence density of central line-associated bloodstream infection step-down unit	1.52%	1.56%	2.00%	3.12%
Utilization rate of central lines – step-down unit	36.48%	32.48%	33.92%	18.21%

Source: SINHA/Anahp.

¹ ANVISA. Boletim Segurança do Paciente e Qualidade em Serviços de Saúde no 20: Avaliação dos Indicadores Nacionais das IRAS e RM 2018. Available at: <<https://www20.anvisa.gov.br/segurancadopaciente/index.php/publicacoes/item/boletim-seguranca-do-paciente-e-qualidade-em-servicos-de-saude-n-20-incidentes-relacionados-a-assistencia-a-saude-2018>>; accessed on 08/Apr/2020.

Monitoring the incidence density of the use of central lines has contributed for their more adequate indication, more timely withdrawal, and more standardized handling by nursing teams.

Hospitals should increase their efforts to reduce the utilization of central lines—or limit the time patients stay with the device, as, according to Anvisa, prolonging the time patients are exposed to invasive devices is the main risk factor for infections.

Another indicator monitored by Anahp hospitals is the density of urinary tract infection related to indwelling urinary catheters associated to the utilization rate of this device (**Table 2**). The literature recommends limiting the time inpatients have a urinary catheter to the minimally necessary. Anvisa's 2018 data² show that the incidence density of urinary tract infection (UTI) associated to indwelling urinary catheters in adult ICUs

was 4 for every 1,000 device-days, whereas in pediatric ICUs, it was 4.20 for every 1,000 device-days.

Among Anahp hospitals, the incidence density of urinary tract infection associated to indwelling urinary catheters in adult ICUs was 1.34 for every 1,000 device-days, whereas in pediatric ICUs, it was 0.24 for every 1,000 device-days in 2019. In step-down units, this number was 2.93 for every 1,000 device-days in the same year.

TABLE 2 | Urinary tract infection in Anahp hospitals

Indicator	2017	2018	2019	Standard deviation 2019
Incidence density of urinary tract infection associated to indwelling urinary catheter – adult ICU	1.99%	1.95%	1.34%	2.28%
Utilization rate of indwelling urinary catheter – adult ICU	39.67%	37.20%	35.42%	16.75%
Incidence density of urinary tract infection associated to indwelling urinary catheter – pediatric ICU	0.78%	0.99%	0.24%	1.05%
Utilization rate of indwelling urinary catheter – pediatric ICU	16.64%	12.57%	12.18%	9.22%
Incidence density of urinary tract infection associated to indwelling urinary catheter – step-down unit	3.13%	2.56%	2.93%	6.59%
Utilization rate of indwelling urinary catheter – step-down unit	11.81%	10.57%	11.12%	7.39%

Source: SINHA/Anahp.

² ANVISA. Boletim Segurança do Paciente e Qualidade em Serviços de Saúde no 20: Avaliação dos Indicadores Nacionais das IRAS e RM 2018. Available at: <<https://www20.anvisa.gov.br/segurancaadopaciente/index.php/publicacoes/item/boletim-seguranca-do-paciente-e-qualidade-em-servicos-de-saude-n-20-incidentes-relacionados-a-assistencia-a-saude-2018>>; accessed on 08/Apr/2020.

Evaluating and correlating these indicators serve as the basis for each hospital, with their own epidemiological features, to adopt preventive measures to reduce the incidence of infections.

The prevalence of comorbidities and a high severity score at patient admission increase the risk of hospital infection associated to devices. In this manner, the quality delivered in intensive care units is one of the key aspects in the management of hospital services.

Ventilator-associated pneumonia (VAP) is an infection related to patient intubation for more than two days. The results obtained in the period analyzed are presented on **Table 3**.

According to Anvisa's 2018 data³, the incidence density of ventilator-associated pneumonia in adult ICUs was 11.50 for every 1,000 ventilator-days. In neonatal ICUs, this number was 3.20 for every 1,000 ventilator-days, whereas in pediatric ICUs, it was

4.50 for every 1,000 ventilator-days in the same year.

Among Anahp hospitals, the incidence density of ventilator-associated pneumonia in adult ICUs was 4.25 for every 1,000 ventilator-days in 2019. In neonatal ICUs, this number was 1.09 for every 1,000 ventilator-days and, in pediatric ICUs, in the same year, it was 1.22 for every 1,000 ventilator-days. In step-down units, in turn, the result reached was 1.82 for every 1,000 ventilator-days in 2019.

TABLE 3 | Ventilator-associated pneumonia in Anahp hospitals

Indicator	2017	2018	2019	Standard deviation 2019
Incidence density of ventilator-associated pneumonia – adult ICU	5.21%	5.40%	4.25%	6.63%
Utilization rate of mechanical ventilation – adult ICU	24.04%	22.62%	21.57%	11.53%
Incidence density of ventilator-associated pneumonia – neonatal ICU	1.22%	1.88%	1.09%	3.50%
Utilization rate of mechanical ventilation – neonatal ICU	13.70%	15.05%	14.74%	11.23%
Incidence density of ventilator-associated pneumonia – pediatric ICU	1.29%	0.83%	1.22%	3.91%
Utilization rate of mechanical ventilation – pediatric ICU	26.58%	25.32%	22.92%	14.86%
Incidence density of ventilator-associated pneumonia – step-down unit	1.67%	1.78%	1.82%	2.96%
Utilization rate of mechanical ventilation – step-down unit	4.76%	4.80%	4.62%	6.28%

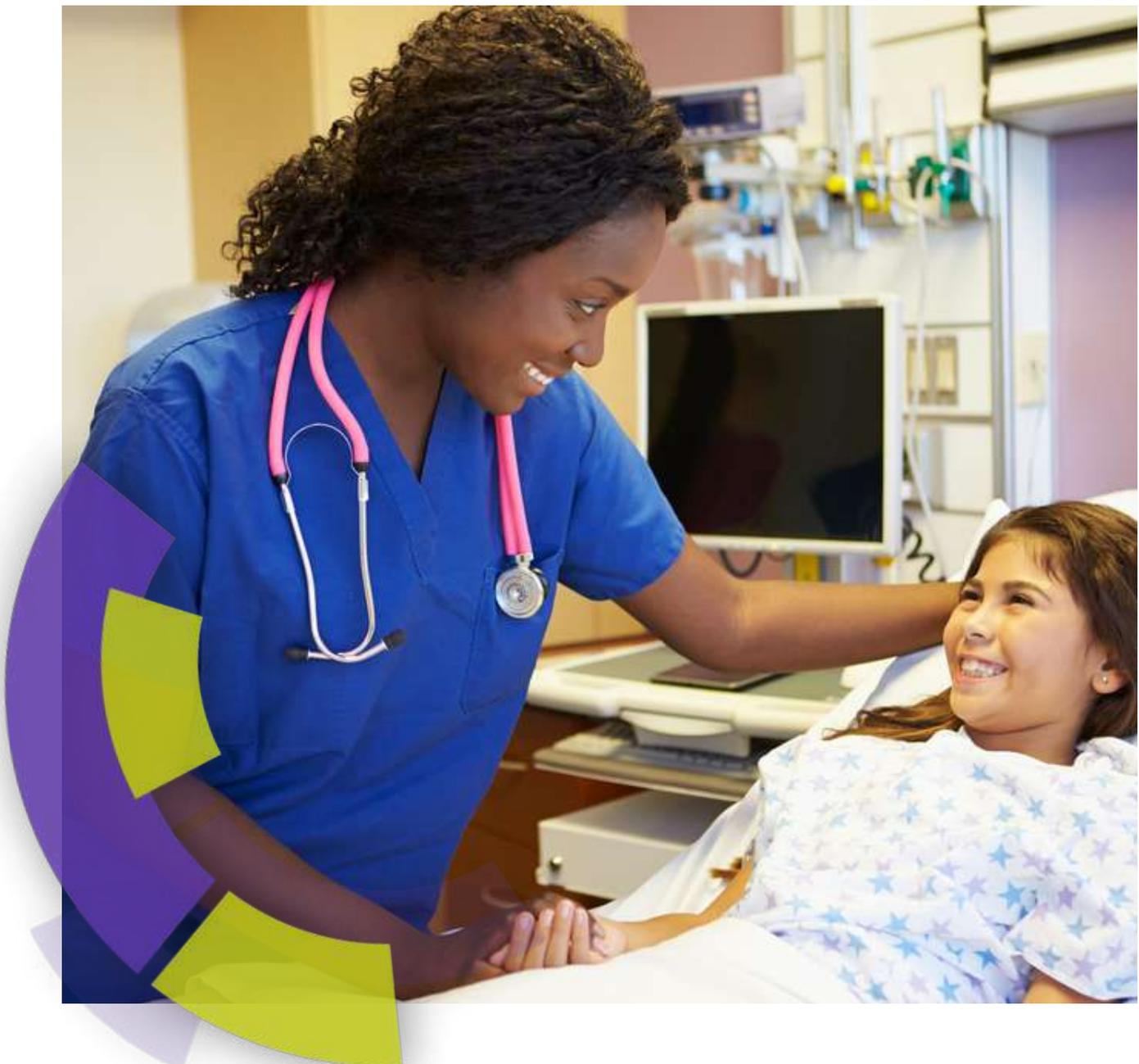
Source: SINHA/Anahp.

³ ANVISA. Boletim Segurança do Paciente e Qualidade em Serviços de Saúde no 20: Avaliação dos Indicadores Nacionais das IRAS e RM 2018. Available at: <<https://www20.anvisa.gov.br/segurancadopaciente/index.php/publicacoes/item/boletim-seguranca-do-paciente-e-qualidade-em-servicos-de-saude-n-20-incidentes-relacionados-a-assistencia-a-saude-2018>>; accessed on 08/Apr/2020.

Reducing the risk of infections related to care and preventing complications for patients is a continuing improvement effort in organizations. In this manner, the actions in that direction result in faster return of patients to their activities, lower social cost, lower rate of disability, and better quality of life. These actions also contribute to lower the risk of readmission, which provides resource savings for the health system.

Surgical site infections are those related to surgical procedures, with or without the placement of implants, in inpatients and outpatients. Clean surgeries are those without signs of inflammation, without contact with the respiratory, alimentary, genital, or urinary tracts and, therefore, less likely to cause infection in patients receiving care.

Acceptable infection rates for clean surgeries may range from **1% to 5%**, according to CVE



Data of São Paulo's Epidemiological Surveillance Center (CVE) indicate that acceptable infection rates for clean surgeries may range from 1% to 5%⁴. The measurement of indicators related to this type of infection favors the identification of the correlation

between prevention actions conducted by the hospital team, and their impact on the occurrence of such infections.

The data related to clean surgeries are presented below (**Table 4**):

TABLE 4 | Infections related to clean surgeries in Anahp hospitals

Indicator	2017	2018	2019	Standard deviation 2019
Rate of surgical site infections after clean surgeries	0.46%	0.60%	0.46%	0.53%
Rate of surgical site infections after appendectomy	0.25%	0.09%	0.11%	0.55%
Rate of surgical site infections after knee replacement surgery	0.92%	0.69%	0.42%	1.74%
Rate of surgical site infections after total hip replacement surgery	0.70%	0.47%	0.68%	2.38%
Rate of surgical site infections after cholecystectomy	0.10%	0.08%	0.10%	0.40%
Rate of surgical site infections after colectomy	1.79%	2.75%	1.99%	6.10%
Rate of surgical site infections after craniotomy	2.57%	2.04%	1.85%	6.16%
Rate of surgical site infections after herniorrhaphy/hernioplasty	0.17%	0.18%	0.29%	0.99%
Rate of surgical site infections after hysterectomy	0.16%	0.19%	0.10%	0.57%
Rate of surgical site infections after mastectomy	0.05%	0.31%	0.44%	2.39%
Rate of surgical site infections after C-section	0.31%	0.37%	0.38%	0.64%
Rate of surgical site infections after CABG	3.41%	2.84%	2.87%	6.90%

Source: SINHA/Anahp.

⁴ SECRETARIA DE ESTADO DA SAÚDE DE SÃO PAULO, Coordenadoria de Controle de Doenças (CCD), Centro de Vigilância Epidemiológica "Prof. Alexandre Vranjac", Divisão de Infecção Hospitalar. Manual de Orientações e Critérios Diagnósticos: Definições e Conceitos – Sistema de Vigilância Epidemiológica das Infecções Hospitalares do Estado de São Paulo. São Paulo, 2020. Available at: <http://www.saude.sp.gov.br/resources/cve-centro-de-vigilancia-epidemiologica/areas-de-vigilancia/infeccao-hospitalar/2020/definicoes_e_conceitos_jh_cve2020.pdf>; accessed on 08/Apr/2020.

Also related to patient safety in the surgical environment, Anahp hospitals monitor side marking, that is, the surgeon marking the site of the surgical intervention (right, left or both, or multiple structures). In the analysis of this indicator, the higher, the better, that is, the safer will the surgeon be at the time of the surgical procedure.

Among Anahp hospitals, the rate of side marking was 95.87% in 2019, as seen in **Table 5**.

To evaluate the quality of nursing care and the practices adopted for the continuing improvement of care, two indicators have been historically used: the incidence density of pressure ulcers and the incidence density of falls.

According to the Joint Commission International (JCI), a fall occurs when a patient unintentionally goes to the ground. They are classified according to the severity of

the harm they cause to patients, that is, minor (required the application of a dressing, ice, wound cleaning, lifting a limb, topical medication, bruise or abrasion), moderate (required suture, application of adhesive/glue suture for the skin, splint, or muscular or joint strain), major (led to surgery, modelling, traction, fracture or required appointment for neurological injury or other structures/ internal organs), and death (patient dies from injuries caused by fall).

According to Anvisa's 2017 data⁵, 8,484 cases of fall were reported in hospitals, a number that may be underestimated due to under-reporting of this event by multidisciplinary teams. Thus, to analyze this indicator, one should assume that the smaller the number of events, that is, the lower the incidence, the better.

In 2019, these indicators had the results presented in **Table 6**.

TABLE 5 | Side marking in Anahp hospitals

Indicator	2017	2018	2019	Standard deviation 2019
Rate of side marking	95.79%	94.91%	95.87%	8.46%

Source: SINHA/Anahp.

TABLE 6 | Falls in Anahp hospitals

Indicator	2017	2018	2019	Standard deviation 2019
Incidence density of falls of patients aged 18 years or more	0.99‰	0.92‰	0.73‰	0.59‰
Incidence density of falls causing injury to patients aged 18 years or more	0.20‰	0.22‰	0.18‰	0.22‰
Percentage of falls causing injury: moderate or severe (patients aged 18 years or more)	7.47%	6.76%	12.91%	21.21%
Incidence density of falls of patients younger than 18 years	0.31‰	0.22‰	0.29‰	0.70‰
Incidence density of falls causing injury to patients younger than 18 years	0.06‰	0.05‰	0.02‰	0.07‰
Percentage of falls causing injury: moderate or severe (patients younger than 18 years)	10.00%	8.49%	5.96%	10.34%

Source: SINHA/Anahp.

⁵ ANVISA. Boletim Segurança do Paciente e Qualidade em Serviços de Saúde no 18: Incidentes Relacionados à Assistência à Saúde – 2017. Brasília, 2018. Available at: <portal.anvisa.gov.br/documents/33852/3074203/Boletim+Seguran%C3%A7a+do+Paciente+e+Qualidade+em+Servi%C3%A7os+de+Sa%C3%BAde+n+18-Incidentes+Relacionados+a+Assist%C3%A7%C3%A3o+a+Sa%C3%BAde+-+2017/9ce866ad-3d59-4a1c-88dc-641b8fda323b>; accessed on 08/Apr/2020.



Care delivery quality and continuing improvement of care practices are also evaluated through the incidences of pressure ulcers and falls

Pressure ulcers are localized injuries on the skin and/or underlying soft tissues, usually over the patient's bone structure or related to the use of a medical device or any other device. The injury occurs as the result of intense and/or prolonged pressure in combination with shear stress.

According to Anvisa's data⁶, in 2017, 13,834 cases

of pressure ulcer were reported in Brazil, in inpatient units alone, data which strengthens the importance of monitoring these indicators.

The indicators of incidence and prevalence of this adverse event are continuously followed up by Anahp hospitals, so that, together they may find effective barriers to mitigate harm. Results are shown in **Table 7**.

TABLE 7 | Pressure ulcers in Anahp hospitals

Indicator	2017	2018	2019	Standard deviation 2019
Incidence density of hospital-acquired pressure ulcers in patients aged 18 years or more	0.85%	1.44%	1.38%	1.15%
Incidence density of hospital-acquired pressure ulcers in patients younger than 18 years	0.10%	0.29%	0.47%	1.05%
Prevalence of hospital-acquired pressure ulcers in patients aged 18 years or more	0.73%	0.92%	1.01%	0.92%
Prevalence of hospital-acquired pressure ulcers in patients younger than 18 years	0.01%	0.07%	0.24%	0.70%

Source: SINHA/Anahp.

⁶ ANVISA. Boletim Segurança do Paciente e Qualidade em Serviços de Saúde no 18: Incidentes Relacionados à Assistência à Saúde – 2017. Brasília, 2018. Available at: <portal.anvisa.gov.br/documents/33852/3074203/Boletim+Seguran%C3%A7a+do+Paciente+e+Qualidade+em+Servi%C3%A7os+de+Sa%C3%BAde+n+18--Incidentes+Relacionados+a+Assist%C3%A7%C3%A3o+em+Sa%C3%BAde+em+2017/9ce866ad-3d59-4a1c-88dc-641b8fda323b>; accessed on 08/Apr/2020.

CLINICAL PERFORMANCE

Organizational protocols

Anahp hospitals use standardized protocols to improve clinical outcomes and increase patient satisfaction





The use of organizational protocols seeks to guide practitioners to reduce variability in the delivery of care for certain clinical conditions

Organizational protocols are instruments developed to standardize processes and guide practitioners on how to proceed to deliver care for a given pathology. In this manner, they also seek to reduce care variability, that is, to make the care provided more homogeneous, thus contributing to a safe care delivery, adequate cost management, and to increase patient satisfaction.

In 2017, Anahp hospitals started to monitor these protocols under a new perspective. The indicators measured by Anahp Integrated System of Hospital Indicators (SINHA) have been parametrized according to new international practices. In this manner, this chapter presents the results from 2017 to 2019.

Acute myocardial infarction

○ acute myocardial infarction (code I21 of the International Classification of Diseases and Related Health Problems, 10th revision – ICD-10) is a lesion to the heart muscle caused by the interruption of blood circulation in part of the heart, and accounts for 7.06% of Brazil's mortality (92,657 deaths), according to 2017 data of the Informatics Department of the Universal Healthcare System (Datasus). In that same year, there was a total of 1,312,663 deaths in Brazil.

Still according to Datasus, the increase in this disease is related to risk factors like unbalanced diet rich in fats, carbohydrates and salt, consumption of processed foods, alcohol, cigarette smoking, use of other drugs, recurrent stress situations, and sedentarism.

Table 1 presents the values of Anahp hospitals, as well as international references.

The indicator median door-to-balloon time – which measures the time elapsed between the patient's arrival at the hospital door to the opening of their coronary artery in the cath lab – was 61.19 minutes in 2019 in Anahp member hospitals. In the international literature, the American Heart Association recommends 90 minutes, maximum. It is worth remembering that data dispersion is great: for this indicator, standard deviation was 45.09 minutes, demonstrating the heterogeneity of the sample.

In the same year, the length of stay of patients with this pathology was 5.23 days, and the lethality for the same sample was 4.45%.

The rate of aspirin prescribed at the discharge of patients diagnosed with acute myocardial infarction was 96.58% in 2019.

TABLE 1 | Acute myocardial infarction protocol

Pathology	Indicators	2017	2018	2019	Standard deviation 2019	Parameters	
ACUTE MYOCARDIAL INFARCTION (AMI)	Median door-to-balloon time (minutes)	72.90	62.90	61.19	45.09	90	American Heart Association
	Median length of stay of inpatients with AMI (days)	5.50	5.70	5.23	3.01	-	-
	Lethality among inpatients with AMI	4.79%	4.86%	4.45%	7.47%	-	-
	Aspirin prescribed at discharge of inpatients with AMI	97.63%	98.60%	96.58%	9.92%	-	-

Ischemic stroke

Ischemic stroke is caused by the lack of blood supply to a certain area of the brain because of an obstruction in an artery.

Data of the World Stroke Organization indicate that, one in every six individuals will have a stroke in their lifetime.

According to the American Stroke Association, ischemic stroke accounts for 87% of all cases of stroke.

In Brazil, stroke (code I64 of ICD-10, stroke, not specified as hemorrhage or infarction) accounts for 2.6% of Brazil’s mortality (36,206 deaths), according to 2017 data of Datasus.

The incidence of stroke is associated to the degree of patient compliance with the treatment for hypertension and to the level of exposure to risk factors. They include especially smoking, high blood glucose levels, alcohol intake, sedentarism, and obesity. Therefore, initiatives focusing on prevention, as smoking cessation campaigns, encouragement to exercise, and reduction of the body mass index are fundamental to decrease the incidence of cerebrovascular diseases.

Quick access to health services in such cases determines prognosis, medical intervention and the degree of incapacity resulting from the disease. The quality of life of the individual and the social impact for families after patient discharge are directly affected by the speed and appropriateness of these interventions.

The results of Anahp hospitals (Table 2) indicate that door-to-report time, which is the median time a patient takes between admission at the emergency department with suspected ischemic stroke until receiving the report of a brain imaging test to support diagnosis – was 38.40 minutes in 2019. International parameters recommend it being below 45 minutes.

In turn, the indicator door-to-thrombolysis time, which is the median time between admission at the emergency department and the beginning of venous thrombolysis in patients with suspected ischemic stroke eligible for this procedure – was 34.70 minutes in 2019. The American Stroke Association recommends it should be up to 60 minutes.

In 2019, the median length of stay of these patients was 5.92 days, and disease lethality was 6.27%.

TABLE 2 | Ischemic Stroke Protocol

Pathology	Indicators	2017	2018	2019	Standard deviation 2019	Parameters
ISCHEMIC STROKE	Median door-to-report time (minutes)	35.68	37.05	38.40	30.44	< 45 American Stroke Association
	Median door-to-venous thrombolysis time (minutes)	32.34	35.01	34.70	36.75	< 60 American Stroke Association
	Median length of stay (days)	5.79	5.67	5.92	4.05	-
	Lethality	6.85%	5.64%	6.27%	9.98%	-

Source: SINHA/Anahp.

Congestive heart failure

Known by the acronym CHF, this condition prevents blood from being pumped at the necessary amount and frequency for the human body to work appropriately. In Brazil, Datasus' 2017 data indicate that there were 27,461 deaths related to this disease (code I50 of ICD-10, heart failure).

The results of Anahp hospitals (**Table 3**) show that the median

length of stay of these patients was 6.84 days, with 5.13% lethality, in 2019.

The use of angiotensin-converting enzyme (ACE) inhibitors, angiotensin receptor antagonists (ARA), and betablockers, according to data of the Brazilian Society of Cardiology, reduces mortality and morbidity in patients with heart failure and left ventricular systolic dysfunction.

The utilization rate of these drugs was 90.66% for ACE inhibitors / ARA and 98.66% for betablockers in 2019. The standard deviation of these indicators was 18.63% for the utilization rate of ACE inhibitors or ARA by patients with CHF at discharge and 11.80% for the rate of betablocker at discharge among eligible patients with CHF.

TABLE 3 | Congestive heart failure

Pathology	Indicators	2017	2018	2019	Standard deviation 2019	Parameters	
CONGESTIVE HEART FAILURE (CHF)	Median length of stay (days)	7.56	6.72	6.84	4.7	-	-
	Lethality rate	7.49%	5.26%	5.13%	6.67%	-	-
	Utilization rate of ACEI or ARA at discharge	89.43%	88.41%	90.66%	18.63%	-	-
	Rate of betablocker at discharge for eligible patients	93.29%	94.29%	98.66%	11.80%	-	-

Source: SINHA/Anahp.



The median length of stay of patients with CHF in Anahp hospitals was **6.84 days**, and lethality was **5.13%**, in 2019

Sepsis

Sepsis is a life-threatening organ failure caused by a dysregulated response of the body to an infection. According to the Latin American Sepsis Institute, the importance of implementing the protocol is due to its high prevalence and high rate of morbidity and mortality, in addition to the high cost related to its treatment.

The one-hour bundle consists of a series of actions that the hospital should implement within

one hour after the diagnosis of this pathology, to minimize the risks for the patient. Such actions include measuring arterial lactate, obtaining blood culture from peripheral access and from short- and long-stay central lines (if the patient has it) and administration of antibiotics. In 2019, the compliance of Anahp hospitals with the one-hour bundle was 84.05% for patients aged 18 years or more, and 76.98% for patients

younger than 18 years. In turn, the rate of antibiotic within one hour of diagnosis was 89.43% and 83.21%, respectively, in that year (**Table 4**).

In 2019, among Anahp hospitals, the median length of stay for this disease was 7.93 days for patients aged 18 years or more and 7.64 days for patients younger than 18; the lethality rate of the disease was 14.21% and 8.60%, respectively.

TABLE 4 | Community Sepsis

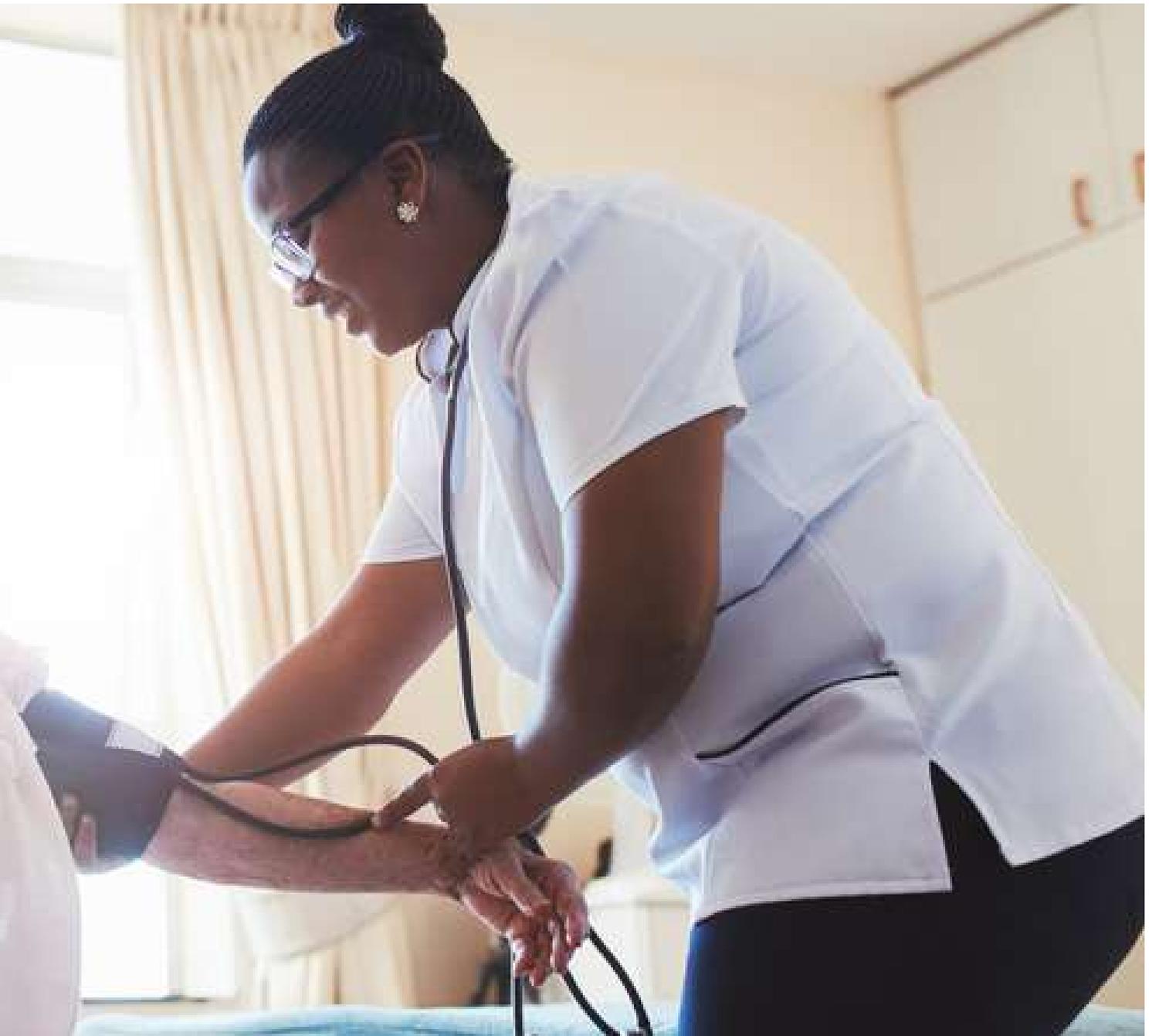
Pathology	Indicators	2017	2018	2019	Standard deviation 2019	Parameters	
SEPSIS ≥ 18 YEARS	Compliance with one-hour bundle	78.81%	80.67%	84.05%	20.72%	-	-
	Median length of stay (days)	9.45	8.59	7.93	3.84	-	-
	Rate of antibiotic within one hour from diagnosis	82.69%	86.72%	89.43%	14.72%	-	-
	Lethality rate	21.24%	16.24%	14.21%	12.82%	-	-
SEPSIS < 18 YEARS	Compliance with one-hour bundle	72.22%	68.86%	76.98%	33.28%	-	-
	Median length of stay (days)	15.64	7.62	7.64	6.66	-	-
	Rate of antibiotic within one hour from diagnosis	81.27%	88.04%	83.21%	24.85%	-	-
	Lethality rate	14.01%	8.04%	8.60%	17.77%	-	-

CLINICAL PERFORMANCE

Home care

Hospitals as
integrators of the
health system





With the growing number of older adults and chronic patients, it is indispensable to integrate hospitals and home care

The change in the population profile, with the growing number of older adults and chronic patients, has induced the need and enhanced the integration between hospitals, which provide critical care, and home care, which provides the adequate routine of care and rehabilitation for stable patients.

The greater attention at the agenda of improving coordinated and continued care is another transformation factor for this greater integration between acute care and home care, contributing for more effective clinical results and for a better experience of patients and families.

Since 2017, Anahp has been collecting information on the performance home care services. In this chapter, we present the results obtained until 2019.

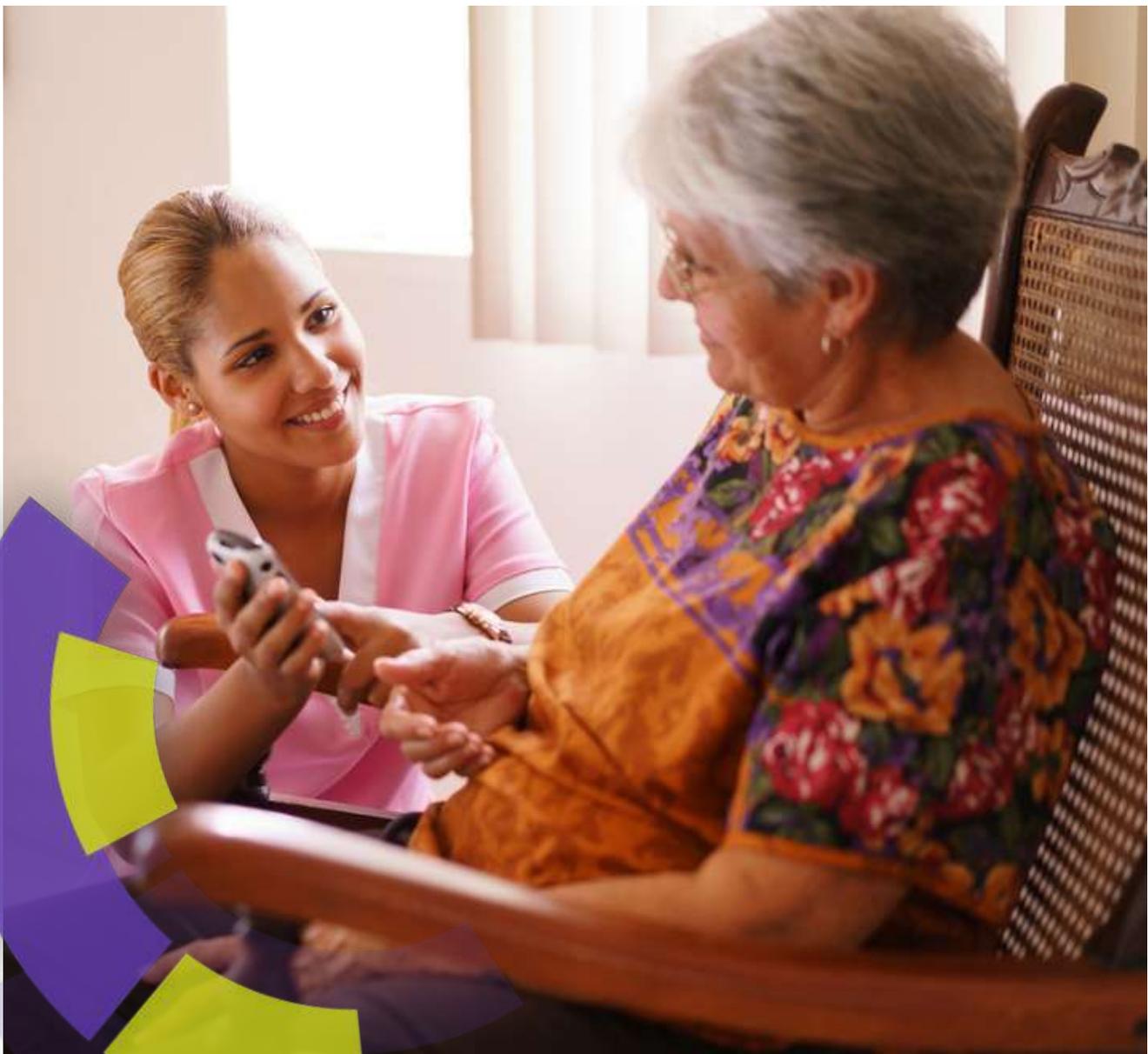
Home care

Home care is a form of healthcare provided to patients at home, taking into consideration their family structure and home infrastructure.

Strictly speaking home care imports some of the processes used in hospitals and adapts them to homes, adjusted to the specificities and unique features of home care services. These services are increasingly used, mainly due to the need to rationalize health resources, optimize hospital beds, have a safe transition from hospitals to homes, providing sustainability to the health system and reducing the need of readmissions

especially for patients with chronic conditions and stabilized acute conditions.

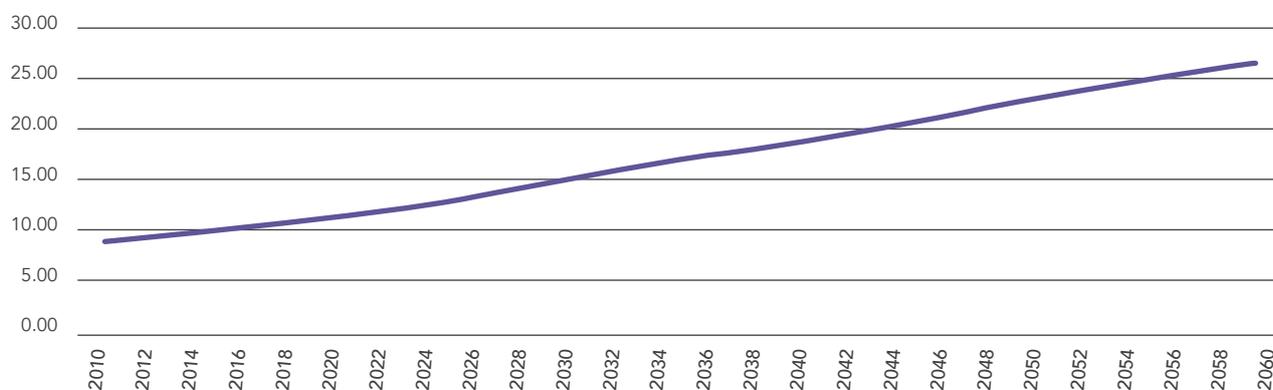
The change in the population profile, with the increasing number of older adults and chronic patients, has enabled the necessary and growing integration between hospitals, which provide critical care, and home care, which provides the adequate routine of care and rehabilitation for stable patients. According to estimates of the Brazilian Institute of Geography and Statistics (IBGE), in 2060, older adults will be 25% of the total Brazilian population.





Providing care to patients at home is fundamental to reduce their length of stay in the hospital

GRAPH 1 | People aged 65 or older in Brazil (% of the population) | 2010-2060



Source: IBGE.

Providing care patients at home is fundamental to reduce their length of stay in the hospital, as well as for their rehabilitation and for the treatment of diseases that require long-term care. According to data of the Research Better at Home, of the Ministry of Health, in 2017, the Universal Healthcare System (SUS) provided care at home to about 30,000 patients¹.

In face of this scenario, in 2015, Anahp created the Home Care Work Group with aim of benchmarking and disseminating good practices among its members, and in 2017, it added to the platform Anahp Integrated System of Hospital Indicators (SINHA) collecting information on the performance of home care.

¹ COORDENAÇÃO GERAL DE ATENÇÃO DOMICILIAR DO DEPARTAMENTO DE ATENÇÃO HOSPITALAR E DE URGÊNCIA DA SECRETARIA DE ATENÇÃO À SAÚDE (SAS), Mariana Borges Dias (responsável pela pesquisa), "Pesquisa Melhor em Casa: relatório etapa III", 3 abr.-12 jun. 2017, available at: <<http://portalarquivos2.saude.gov.br/images/pdf/2018/abril/13/Pesq-satisfacao-relatorio-3edicao.pdf>>; accessed on 3/Apr/2020.



As it is done with the other indicators, technical specification forms were defined to standardize the collection of the indicators that will be listed next.

Average length of stay in home care measures the average time in days patients stay in home care and it is related to good clinical practices. It should be mentioned that the average length of stay of patients in home care is not comparable to the average length of stay in the hospital, because home care has a substitutive or complementary character to hospital interventions and, therefore, provides services quite different from those of hospitals. In this manner, in 2019, among Anahp hospitals, the Average length of stay of patients in home care was 503.98 days, a significant growth in relation to previous years (Graph 2).

The rate of discharge of these patients, which measures the monthly percentage of those who leave home care, has gone up to 20% in 2019, in contrast with 9.81% in 2017 and 14.15% in 2018 (Graph 3).

GRAPH 2 | Average length of stay of patients in home care (days)



GRAPH 3 | Rate of patient discharges from home care (%)



The mortality rate of this care regimen is greater than that of hospitals. The average mortality rate of Anahp hospitals has gone up from 1.69% in 2017 to 1.79% in 2018 and reached 2.14% in 2019 **(Graph 4)**.

The rate of infections acquired in home care, in turn, fell.

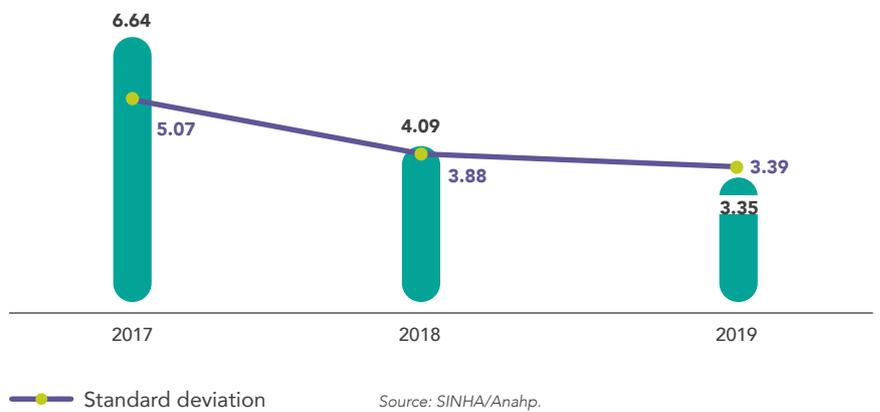
The result was 6.64% in 2017, 4.09% in 2018 and 3.35% in 2019 **(Graph 5)**.

Home care is characterized by taking place in each patient’s private environment and should consider technical standards and rules in the delivery of care to individuals to make it safe, and also consider the unique features of family life and/or care givers. It is worth mentioning that families play a key role to assure the success of care and the person’s transition back to their routine, when possible.

GRAPH 4 | Mortality rate of patients in home care (%)



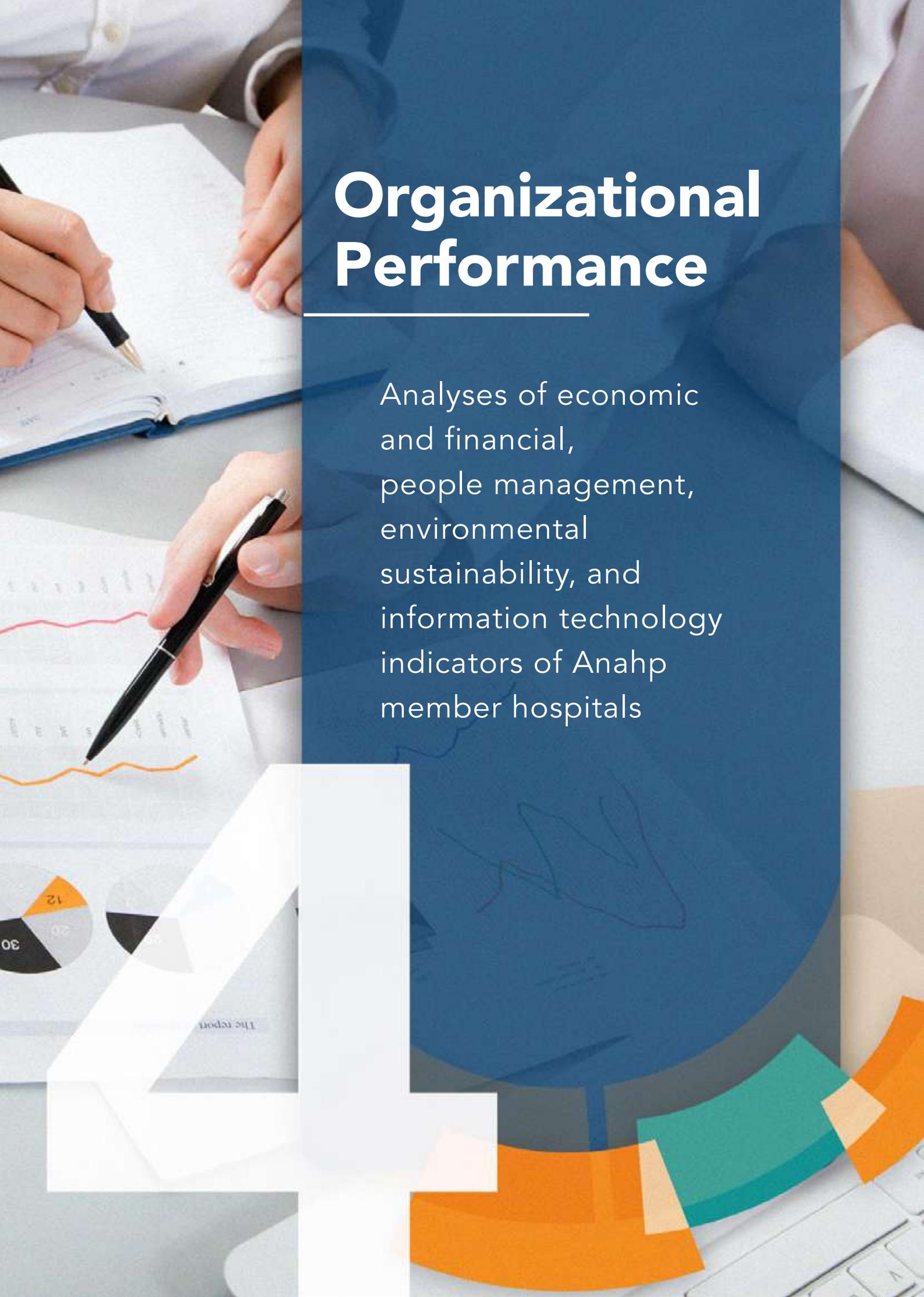
GRAPH 5 | Rate of infections acquired in home care (%)





Organizational Performance

Analyses of economic and financial, people management, environmental sustainability, and information technology indicators of Anahp member hospitals



Executive summary



ECONOMIC-FINANCIAL MANAGEMENT

Rate of denials (health carriers' refusal to pay) and average receiving time dropped in 2019

RATE OF DENIALS (% OF NET REVENUE)

Average of Anahp hospitals



AVERAGE RECEIVING TIME (DAYS)

Average of Anahp hospitals



NET REVENUE PER HOSPITAL DISCHARGE (R\$ in 2019)

ACTUAL VARIATION (DISCOUNTING INFLATION)

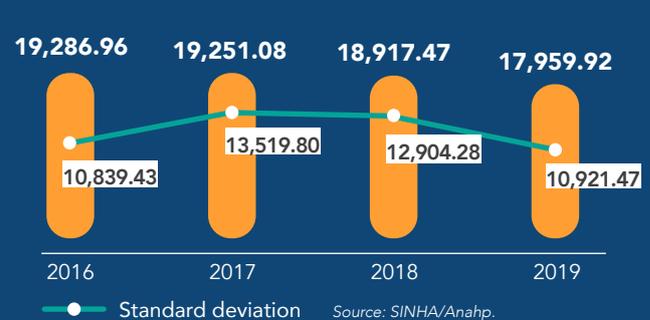
Average of Anahp hospitals



TOTAL EXPENSE PER HOSPITAL DISCHARGE (R\$ in 2019)

ACTUAL VARIATION (DISCOUNTING INFLATION)

Average of Anahp hospitals



DISTRIBUTION OF GROSS REVENUE PER PAYOR, PER REGION (%)

Source: SINHA/Anahp.

Type of revenue	South	Southeast	North Center-West	Northeast	Brazil
Healthcare Companies	82.72	94.77	95.98	77.56	89.91
Medical Cooperative Groups	53.21	20.49	32.06	23.62	31.82
Self-Managed Plans	21.60	27.17	40.68	54.00	27.86
Insurance Companies	10.51	33.38	17.74	13.25	24.50
HMO	5.87	18.27	9.35	8.97	13.88
Philanthropy	8.79	0.25	0.07	-	1.85
International Companies	0.02	0.45	0.10	0.21	0.09
SUS (Universal Health System)	11.73	1.60	0.54	18.13	5.61
Private Market	3.56	3.11	2.60	3.10	3.26
Other Payors	1.98	0.52	0.88	1.21	1.23



PEOPLE MANAGEMENT

The recovery of employment in Brazil is still gradual and is reflected in 2019's people management indicators



The number of hires by headcount and turnover confirm job market recovery indications in the hospital industry in the period under analysis

NUMBER OF HIRES BY HEADCOUNT (%)

Average of Anahp hospitals



TURNOVER (%)

Average of Anahp hospitals



ENVIRONMENTAL SUSTAINABILITY

The average consumption of water and electric power increased 2019; in contrast, the hospital-generated infectious waste fell in Anahp hospitals

CONSUMPTION OF ELECTRIC POWER AS KWH PER PATIENT-DAY

Average of Anahp hospitals



WATER CONSUMPTION AS M³ PER PATIENT-DAY

Average of Anahp hospitals



HOSPITAL-GENERATED INFECTIOUS WASTE PER PATIENT-DAY (KG)

Average of Anahp hospitals



INFORMATION TECHNOLOGY

IT internal customer satisfaction and problem-solving rate were both high

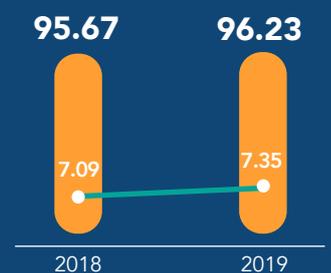
SATISFACTION AMONG IT INTERNAL CUSTOMERS (%)

Average of Anahp hospitals



IT PROBLEM-SOLVING RATE

Average of Anahp hospitals



Economic- financial management

The pursuit for financial balance drives the decisions of hospital managers, based on eliminating waste





Holding expenses helps explain the balance of the margin in 2019

The net revenue per patient-day and per hospital discharge dropped in actual numbers, which also led the EBITDA (earnings before interest, taxes, depreciation, and amortization) margin to fall.

The receiving time for payments from health plan companies and the rate of denials (refusal to pay by health plan companies) presented a slight reduction in 2019. However, it should be highlighted that it remains at high levels, with a negative impact on the economic-financial balance of hospitals, especially on cash flow.

Economic-financial performance of Anahp hospitals

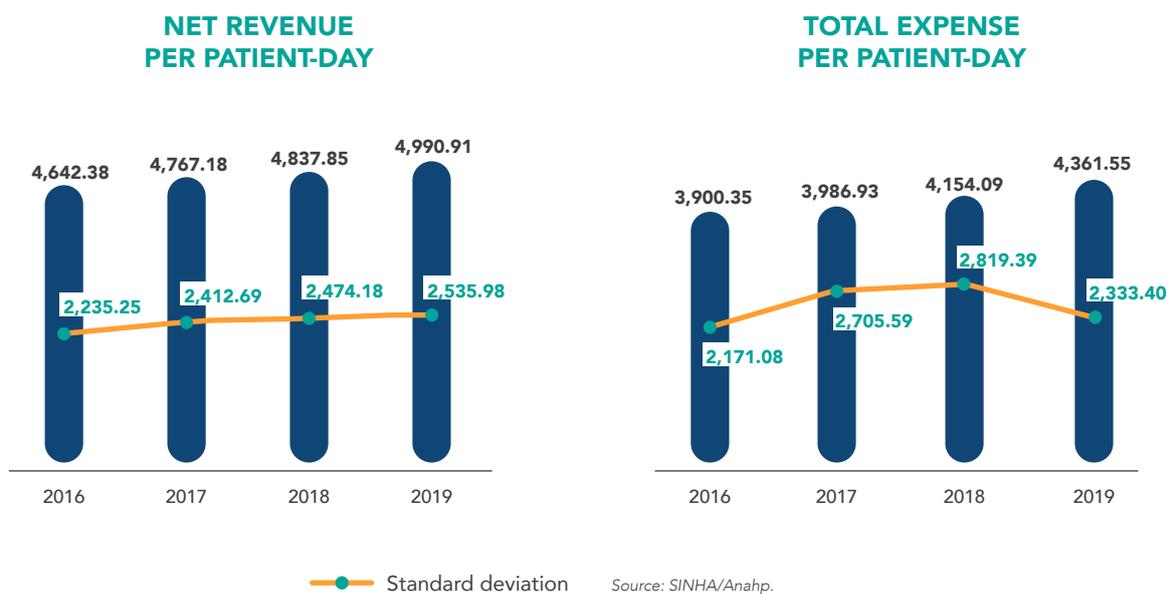
The revenues and expenses of hospitals are a combination of the quantity and type of care provided to patients, taking into account the profile of the customer portfolio, with costs associated to rendering and improving these services, as well as to the maintenance and expansion of the hospital infrastructure.

Net revenue per patient-day grew 3.16% in 2019, whereas total expense per patient-day increased 4.99%¹ (Graph 1).

When discounting inflation (measured by the National Extended Consumer Price Index – IPCA), it is possible to note an actual 1.10% fall of the net revenue per patient-day and a 0.66% growth in total expenses per patient-day in 2019 (Graph 2).



GRAPH 1 | Net revenue and total expense per patient-day (R\$) – Average of Anahp hospitals

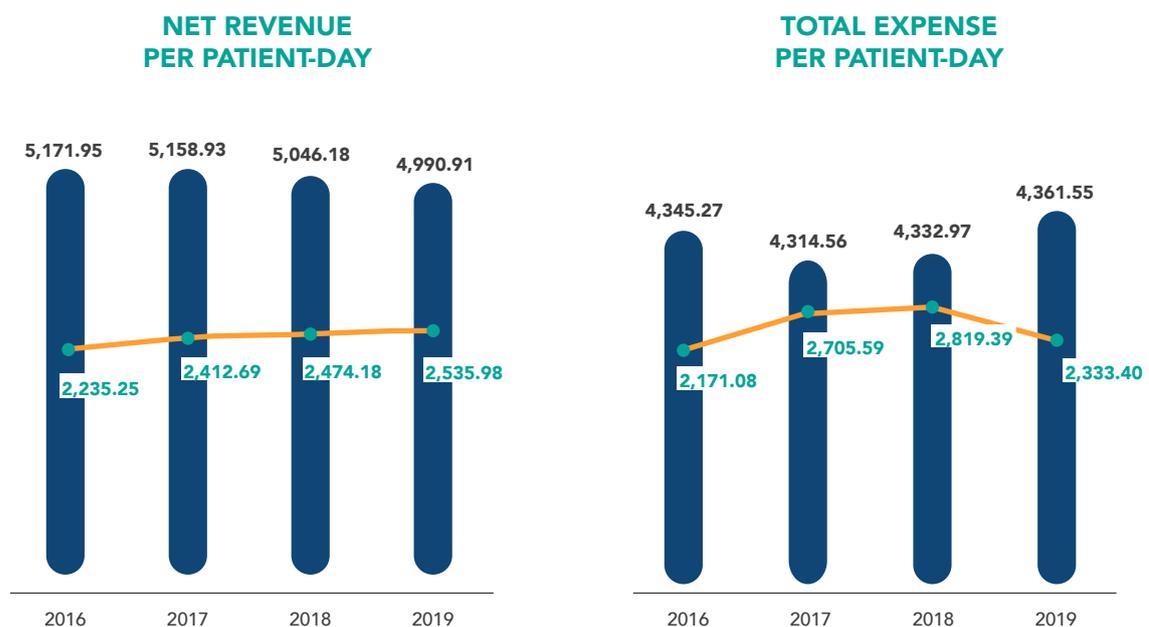


¹ Net revenue is formed by gross revenue minus payments of taxes due on revenue and denied and not received amounts. Total expenses, in turn, include : expenses with personnel; contracts with support and logistics third-parties; technical and operational contractors; medication, materials, OPME (orthoses, prostheses and special materials); medical gas ; other hospital supplies; maintenance and technical services; utilities (electric power, water and other government-regulated prices); financial expenses (including interest on loans); depreciation; and other operational expenses.



In 2019,
net revenue per
patient-day grew
3.16%, whereas
total expense
per patient-day
grew **4.99%**

GRAPH 2 | Net revenue and total expense per patient-day (R\$ in 2019) – Actual variation (discounting inflation) – Average of Anahp hospitals



Standard deviation

Source: SINHA/Anahp.

When analyzing indicators per hospital discharge, it is possible to observe a fall both in actual value and in face value.

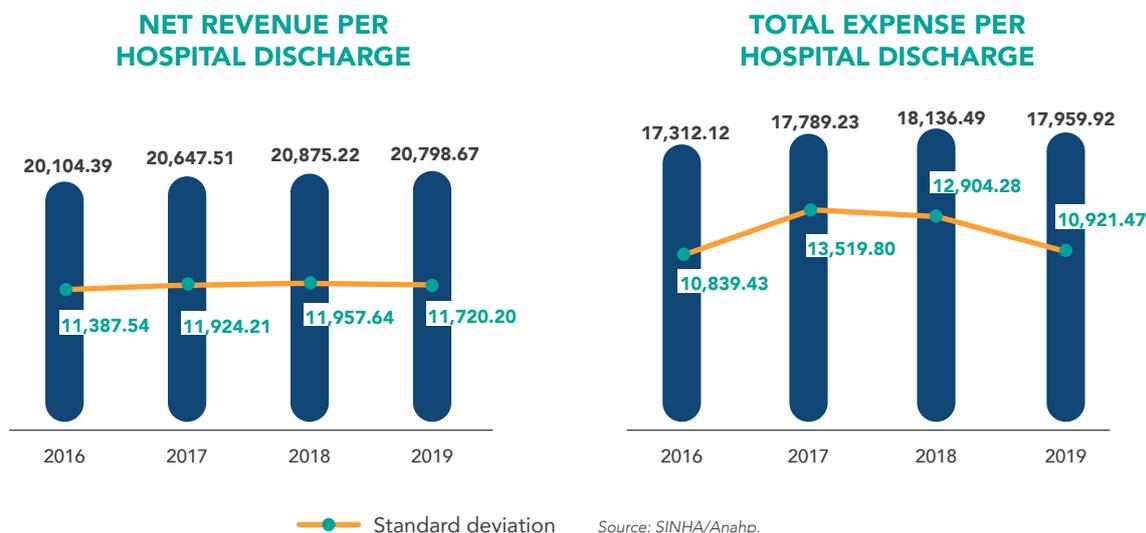
Net revenue per hospital discharge dropped 0.37% in 2019, while total expense per hospital discharge dropped 0.97% in the same period (Graph 3).

When discounting inflation, net revenue fell 4.48% per hospital discharge and expense per hospital discharge dropped 5.06% (Graph 4).

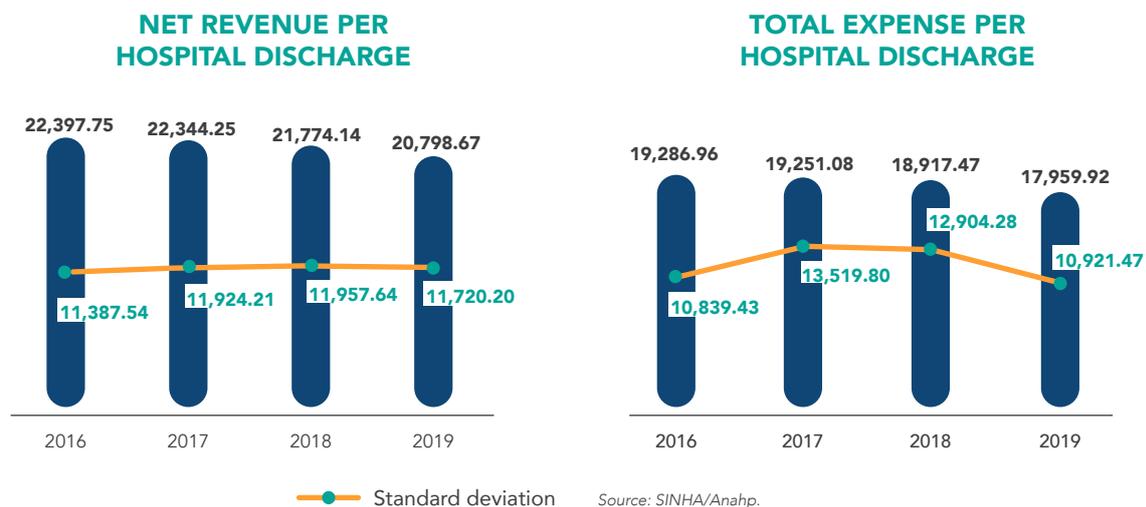
The net revenue of Anahp hospitals, measured in relation to patient-day and hospital discharge, has been growing below the average adjustment of health plans (7.35% in 2019) and indicators like medical inflation (VCMH), by the Private Health Studies Institute (IESS), which tries to measure the evolution of health costs (17.30% high in 2018).

The average EBITDA margin of Anahp hospitals fell from 14.18% in 2016 to 12.40% in 2019 (Graph 5).

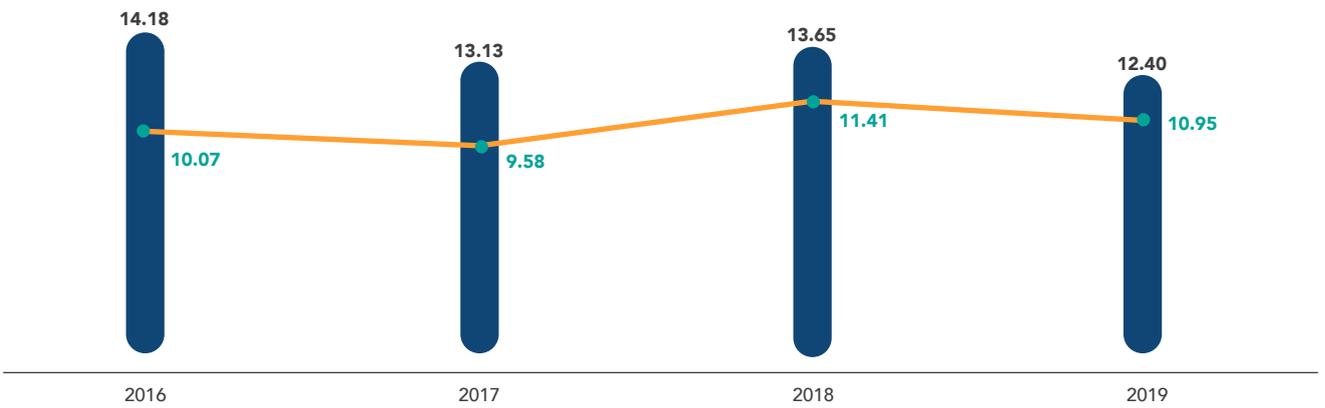
GRAPH 3 | Net revenue and total expense per hospital discharge (R\$) – Average of Anahp hospitals



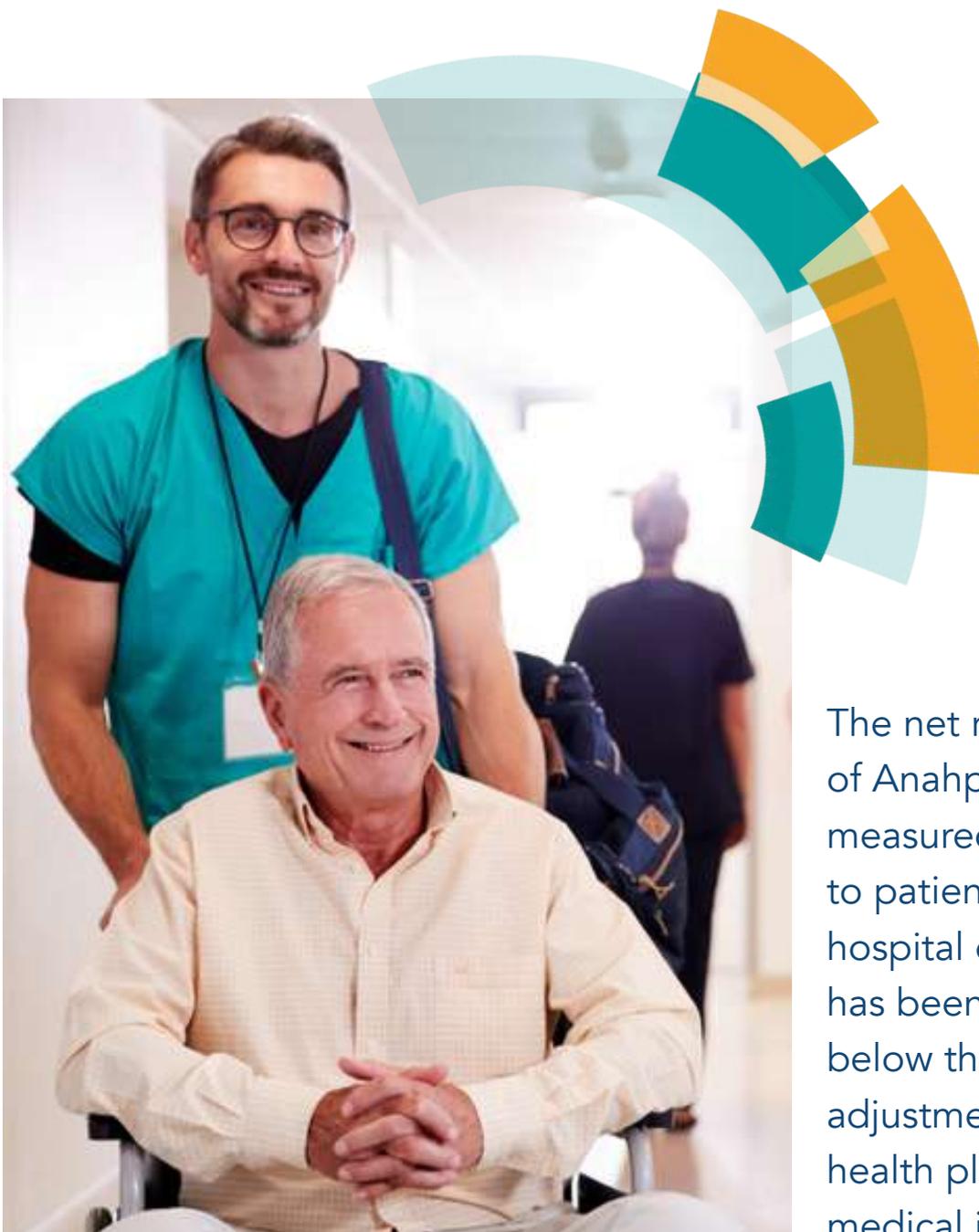
GRAPH 4 | Net revenue and total expense per hospital discharge (R\$ in 2019) – Actual variation (discounting inflation) – Average of Anahp hospitals



GRAPH 5 | EBITDA margin (%) – Average of Anahp hospitals



Standard deviation Source: SINHA/Anahp.



The net revenue of Anahp hospitals, measured in relation to patient-day and hospital discharges, has been growing below the average adjustment of health plans and medical inflation

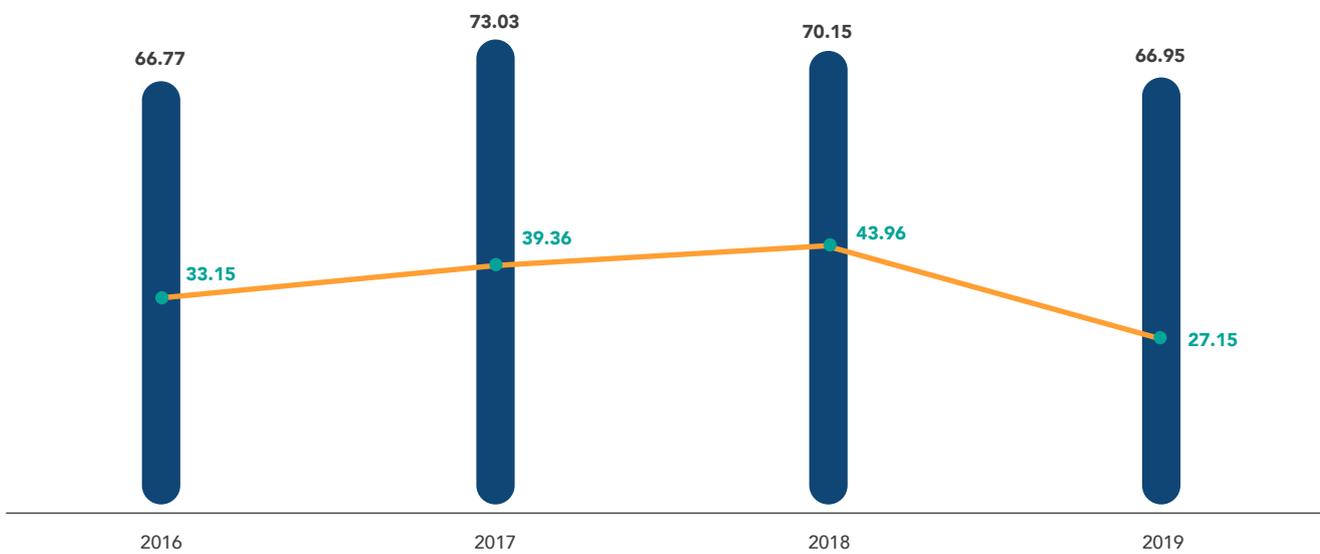
Denials and receiving time

Two particularly important indicators for Anahp members are receiving time of payments from health plan companies by hospitals and the rate of denials (payment refusal by health plan companies).

in 2018 to 66.95 days in 2019 (Graph 6). And the rate of denials, measured as a proportion net revenue, fell from 4.19% to 3.86% (Graph 7). These results evidence the improvement of these indicators among Anahp hospitals.

Average receiving time decreased from 70.15 days

GRAPH 6 | Average receiving time (days) – Average of Anahp hospitals



Standard deviation Source: SINHA/Anahp

GRAPH 7 | Rate of denials (% da net revenue) – Average of Anahp hospitals



Standard deviation Source: SINHA/Anahp

Expense profile

Expenses with labor, which include both formal employees and technical services, accounted for more than 50% of the expenses of Anahp hospitals in 2019.

These lines, by the way, represented the two main cost pressures for hospitals in 2019. The share of personnel cost (expense with employees) had a slight fall, going from 37.32% in 2018 to 37.03% in 2019. Technical and operational contracts, on the other hand, increased their share from 13.72% in 2018 to 14.33% in 2019. A falling trend may be noted in the share materials and orthoses, prostheses, and special materials (OPME) have had in expenses along past years. Together, these indicators accounted for 14.65% in 2016 and went down to 12.30% in 2019 (Table 1).



The fall in average receiving time and rate of denials is an evidence of the improvement of these indicators among Anahp hospitals

TABLE 1 | Distribution of total expense per type of expense (%) – Average of Anahp hospitals

Types of expense	2016	2017	2018	2019	Standard deviation 2019
Personnel cost	36.18	37.44	37.32	37.03	11.86
Technical and operational contracts	13.04	14.01	13.72	14.33	8.82
Medication	10.81	10.73	10.79	10.63	4.48
Other expenses	6.92	6.61	8.18	9.09	9.50
OPME	8.45	7.83	7.18	6.56	4.09
Materials	6.20	6.57	6.37	5.74	2.26
Support and logistics contracts	4.87	3.98	4.27	4.03	3.05
Other supplies	3.18	3.24	2.77	3.13	1.91
Depreciation	2.91	2.83	2.87	2.82	1.14
Utilities	2.30	2.04	2.24	2.23	1.35
Financial expenses	3.05	2.44	2.06	2.15	2.36
Maintenance and technical assistance	1.75	1.96	1.91	2.02	1.28
Medical gas	0.34	0.31	0.32	0.23	0.16

Revenue profile

Medications accounted for 25.75% of the revenue of Anahp hospitals in 2019; daily fees and rates, for 22.90%; other operating revenues, for 19.02%; materials for 18.32%; OPME for 8.27%; other service revenues for 3.45%; medical gas for 1.83%; and donations for 0.46% (**Table 2**).

In 2019, 89.91% of the revenue of Anahp hospitals came from funds managed by health plan companies. Of that total, 31.82% came from medical cooperative groups; 27.86% from self-managed plans; 24.50% from insurance companies; 13.88% from HMOs; 1.85% from philanthropy; and 0.09% from international plans.

The revenues from the Universal Healthcare System (SUS) represented 5.61% of the total in 2019; out-of-pocket payments were 3.26%; and other payors, 1.23% (**Table 3**).

In 2019, about **90%** of the revenues of Anahp hospitals came from funds managed by health plan companies

TABLE 2 | Distribution of gross revenue per type (%) – Average of Anahp hospitals

Type of revenue	2016	2017	2018	2019	Standard deviation 2019
Medication	23.66	25.13	24.66	25.75	10.22
Daily fees and rates	19.31	20.92	21.65	22.90	8.19
Other operating revenues	12.03	18.10	19.01	19.02	11.49
Materials	21.34	22.16	20.36	18.32	8.34
OPME	8.68	8.66	8.30	8.27	4.95
Other service revenues	-	2.11	3.39	3.45	4.72
Diagnostic tests and imaging	12.62	-	-	-	-
Medical gas	2.36	2.49	2.30	1.83	1.10
Donations	-	0.43	0.34	0.46	1.08



TABLE 3 | Distribution of gross revenue per payor (%) – Average of Anahp hospitals

Type of revenue	2016	2017	2018	2019	Standard deviation 2019
Healthcare companies	91.70	90.27	90.97	89.91	6.81
Medical cooperative groups	34.10	31.66	31.80	31.82	25.97
Self-managed plans	26.04	27.86	27.16	27.86	15.99
Insurance companies	25.85	26.53	26.91	24.50	18.88
HMOs	13.36	13.19	12.49	13.88	11.77
Philanthropy	0.28	0.61	1.52	1.85	4.99
International plans	0.38	0.16	0.12	0.09	0.23
SUS (Universal Healthcare System)	3.75	5.32	4.65	5.61	9.36
Out of pocket	4.55	3.70	3.45	3.26	1.89
Other payors	0.00	0.72	0.92	1.23	1.79

Regional features of Anahp hospitals

Since 2017, improvements in the Anahp Integrated System of Hospital Indicators (SINHA) have made it possible to draw several comparisons, including by Anahp region.

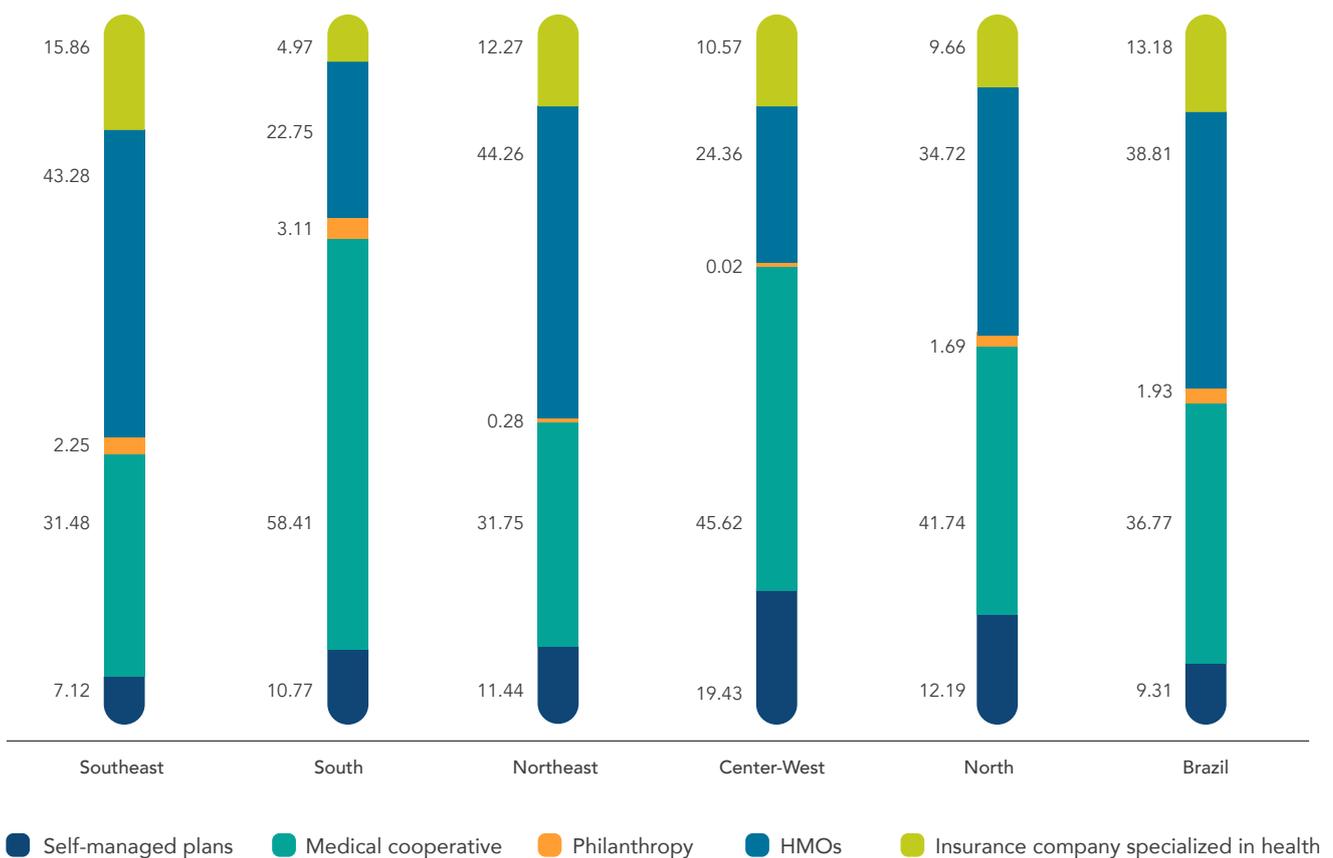
We compared the relationship between the profile of health plan

members and the revenue of Anahp hospitals per payor, per region, and the possible impacts of these profiles on the revenue of hospitals.

To assure a relevant sample, the hospitals in regions North and Center-West were grouped.

As addressed in the chapter “Private Health Market”, when we consider the different modalities of health plans, we note that, in regions South, North and Center-West, the main modality, in membership, is medical cooperative (**Graph 8**).

GRAPH 8 | Distribution of health plan membership per modality and region (%) | December 2019



Source: ANS (on 06/Mar/2020). Does not include health plan companies providing dental plans only.

Data of the National Healthcare Private Agency (ANS) on hospitals in the South region show that 58.41% of health plan members are in medical cooperative groups and 22.75% are in HMOs. Of the revenues of Anahp hospitals, 82.72% come from healthcare cooperative companies – of which 53.21%

are from plans of medical groups, followed 21.60% from self-managed plans.

In the Southeast region, where 43.28% of the members are in HMOs and 31.48% in medical cooperative groups, the revenues of Anahp hospitals come chiefly from insurance companies – 33.38%.

TABLE 4 | Distribution of gross revenue per payor, per region (%) – Average of Anahp hospitals | 2019

Type of revenue	South	Southeast	North and Center-West	Northeast	Brazil
Healthcare companies	82.72	94.77	95.98	77.56	89.91
Medical cooperative	53.21	20.49	32.06	23.62	31.82
Self-managed plans	21.60	27.17	40.68	54.00	27.86
Insurance companies	10.51	33.38	17.74	13.25	24.50
HMOs	5.87	18.27	9.35	8.97	13.88
Philanthropy	8.79	0.25	0.07	-	1.85
International Plans	0.02	0.45	0.10	0.21	0.09
SUS	11.73	1.60	0.54	18.13	5.61
Out of pocket	3.56	3.11	2.60	3.10	3.26
Other payors	1.98	0.52	0.88	1.21	1.23

Source: SINHA/Anahp



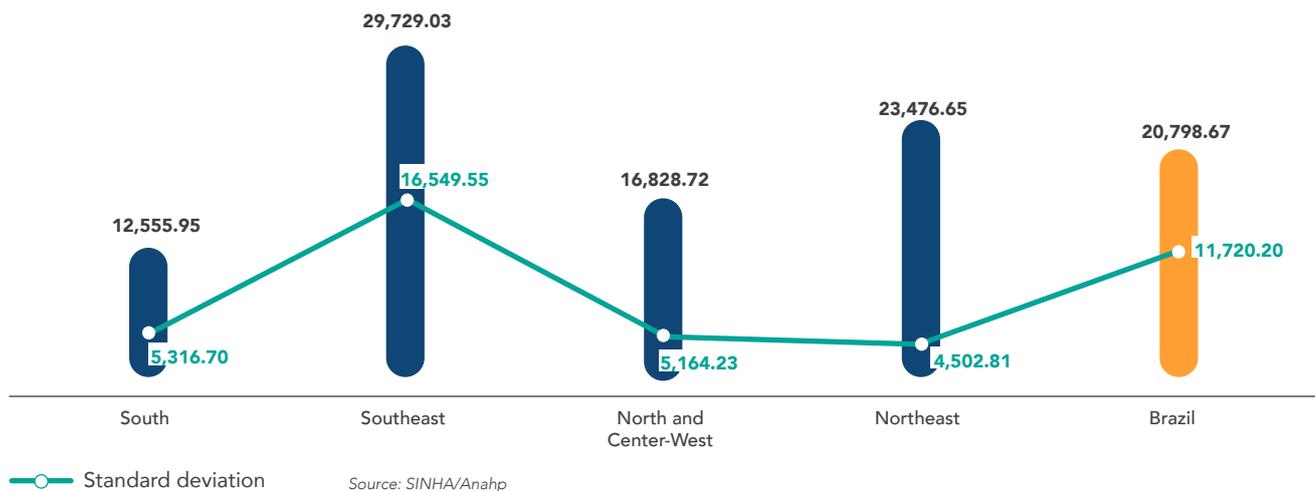
Considering the different modalities of health plans, it is possible to note that in regions South, North and Center-West, medical cooperatives have the highest membership

Also noteworthy in Anahp hospitals in the Northeast region, is the relevance of SUS (18.13%), well above other regions (Table 4).

Regarding net revenue per hospital discharge, it is possible to see a large difference among each region's

hospitals, as suggested by standard deviations. Below, it is possible to see a greater discrepancy in the data of the Southeast region in relation to Brazil's average and to the standard deviation of the region (Graph 9).

GRAPH 9 | Net revenue per hospital discharge (R\$), per region – Average of Anahp hospitals | 2019



Global revenue of Anahp hospitals

In 2019, the aggregate gross revenue of member hospitals reached R\$ 40.10 billion.

This issue of Observatorio Anahp, as well as others, used data of all Anahp hospitals in December of each year, so that the growth reflects the variation of each hospital's total revenue and the increase in the number of members.



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People management

Staff turnover
continues as one of
the main challenges
organizations face





Retaining qualified practitioners and internal hires are essential to deliver better care results to patients

The economic-financial scenario imposes a special challenge to the hospital industry with regard to people management, as the need to control expenses cannot cause, in any way whatsoever, losses to patients and care delivery quality.

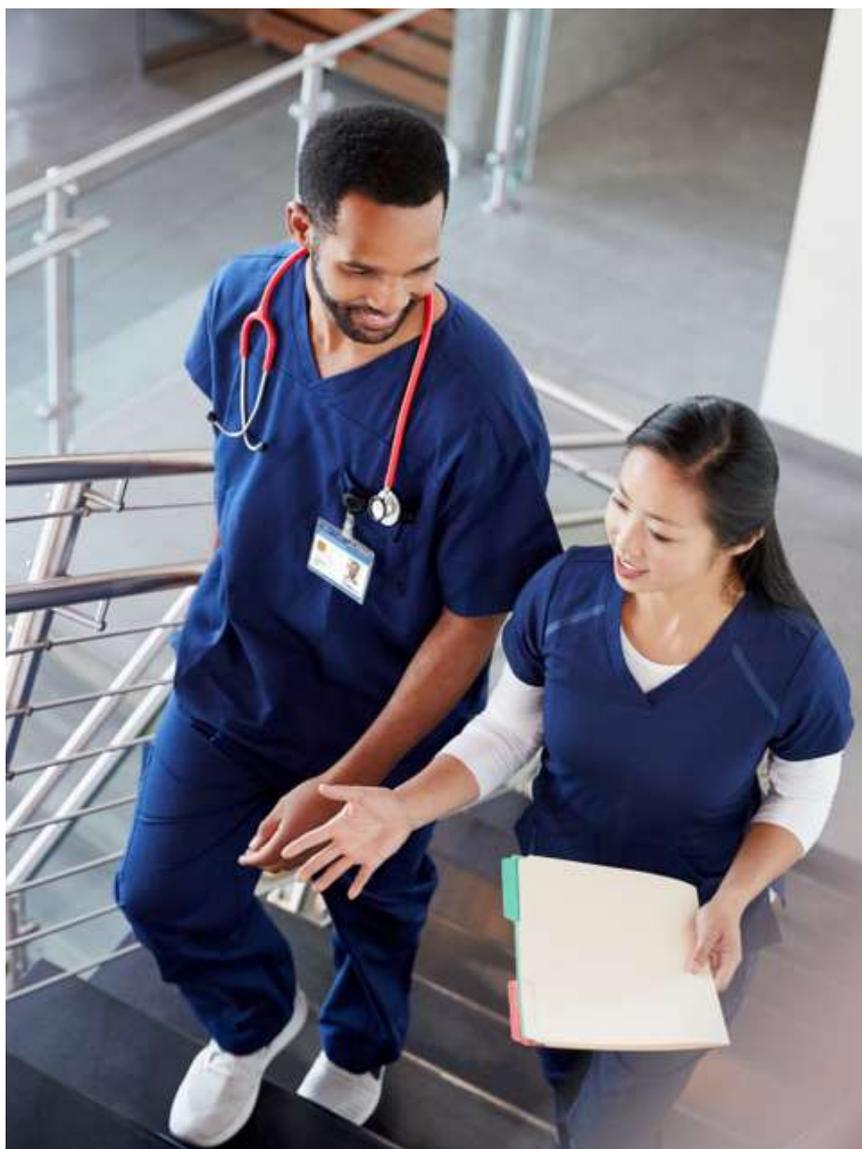
As indicated in the chapter “Private Health Market”, the healthcare industry – and the hospital segment, particularly – has stood out in the creation of jobs in Brazil in the past few years. The recovery of employment in Brazil, still tentative, is reflected in the people management indicators presented in this section.

Moreover, as mentioned in the previous chapter (“Economic-Financial Management”), expenses with personnel, which account for almost half of hospital expenses, stood out last year as one of the main cost pressures for hospitals, which can help explain the timid increase in the hiring pace.

New hires, lost employees, and turnover

The number of new hires by headcount (number of active people) grew for the second year in a row (1.83% in 2017, up to 1.96% in 2018 and to 2.01% in 2019) (Graph 1). The movement is aligned with the creation of formal vacancies in the hospital industry in Brazil with significant improvement in 2018 and 2019.

GRAPH 1 | Number of hires by headcount (%) – Average of Anahp hospitals

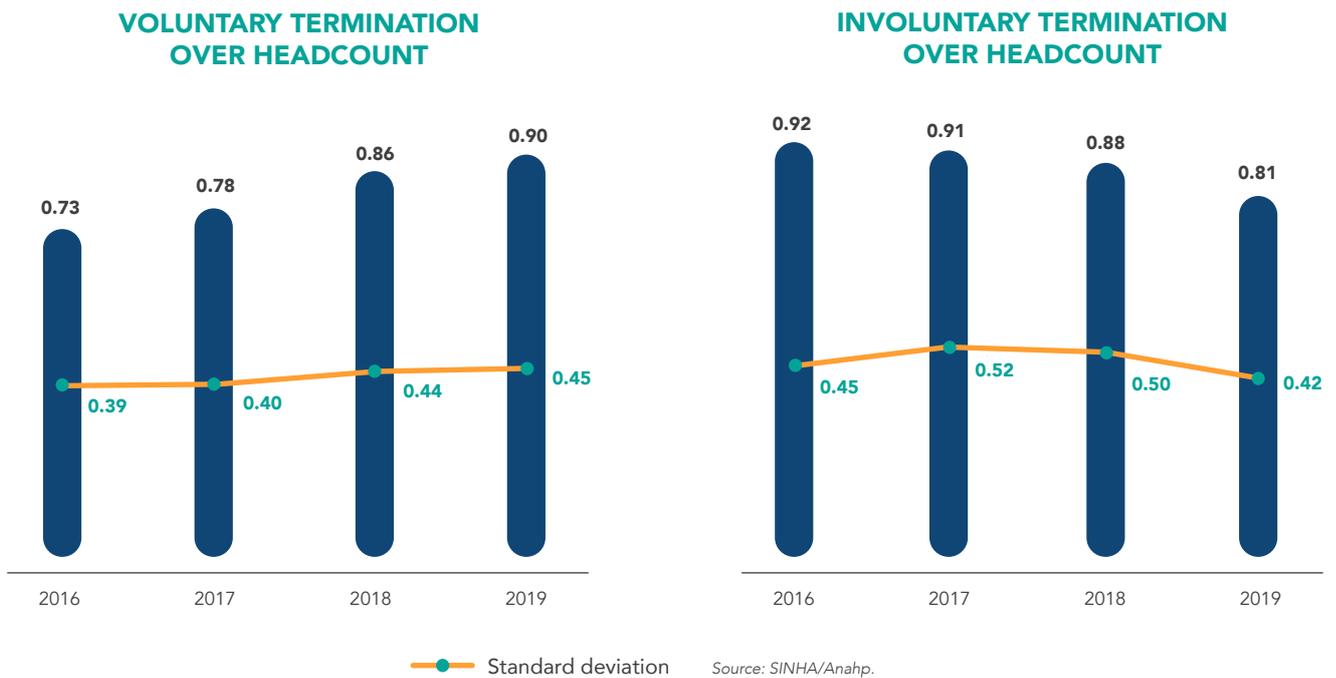


The number of hires over headcount grew for the second year in a row. This movement is aligned with the creation of formal vacancies in the hospital industry in Brazil in 2019

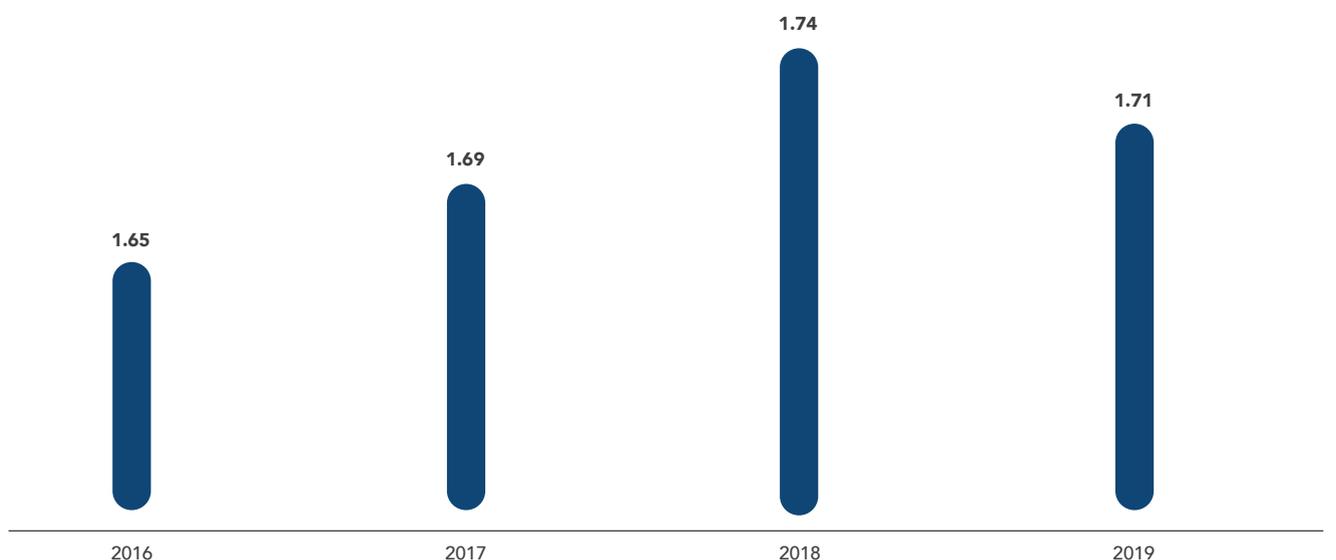
The indicator of voluntary terminations over headcount has presented a growing trend since 2017, reaching 0.90% in 2019, which may be a sign of recovery of the hospital industry’s job market.

The rate of involuntary terminations, in turn, followed the opposite trend, getting to 0.81% in 2019. In this manner, the overall termination rate was 1.71% in the same year under analysis (Graphs 2 and 3).

GRAPH 2 | Rates of voluntary and involuntary terminations over headcount (%) – Average of Anahp hospitals



GRAPH 3 | Overall termination rate over headcount (%) – Average of Anahp hospitals

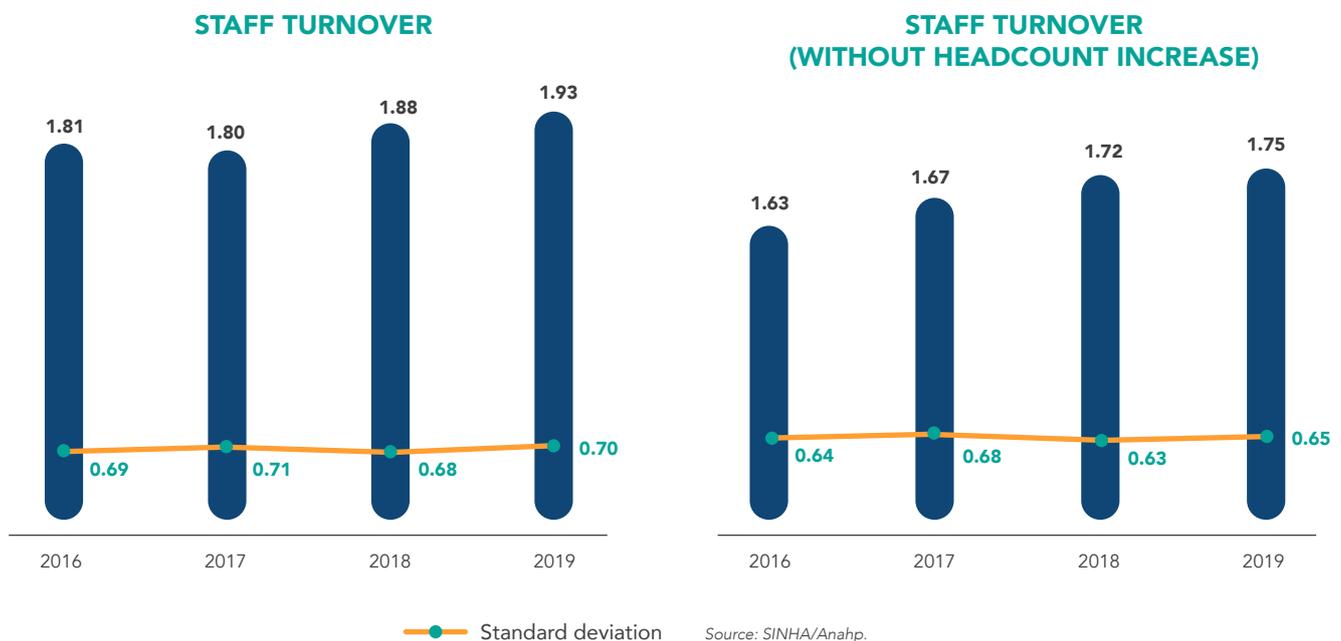


One of the major challenges for the operational management of hospitals, is undoubtedly staff turnover, because it affects the processes of hiring, training, and qualification of new employees. Considering the difficulties, the costs involved, and the improvement of care results for patients, it is fundamental to establish programs for staff retention and internal hires of qualified employees that want to move to a different area.

Staff turnover is the average rate of new hires (due to headcount increase or replacements) and terminations in relation the total headcount at a given period, measuring, therefore, total employee turnover in organizations. In crisis periods, turnover tends to fall both due to a drop in the generation of vacancies and employee replacement and because workers are less likely to change jobs, a reflex of the employment market slowdown and increase of risk aversion. In line with that, it is possible to also identify, in the indicators below, the signs of a recovery of the health industry. Staff turnover went from 1.80% in 2017 to 1.93% in 2019; and turnover without headcount increase, in turn, went from 1.67% in 2017 to 1.75% in 2019, a high related to the small increase in voluntary terminations (**Graph 4**).



GRAPH 4 | Turnover rates (%) – Average of Anahp hospitals





In crisis periods, turnover tends to fall both due to a drop in the generation of vacancies and employee replacement and because workers are less likely to change jobs

When analyzing nursing turnover – which is directly related to the care provided to patients on the bedside, it is possible to identify that it followed a trend opposite to that of other turnover rates. Nursing turnover, which had increased from 2.04% in 2017 to 2.16% in 2018, fell to 1.76% in 2019, which represents again for organizations because they are retaining qualified practitioners (**Graph 5**).

GRAPH 5 | Nursing turnover (%) – Average of Anahp hospitals

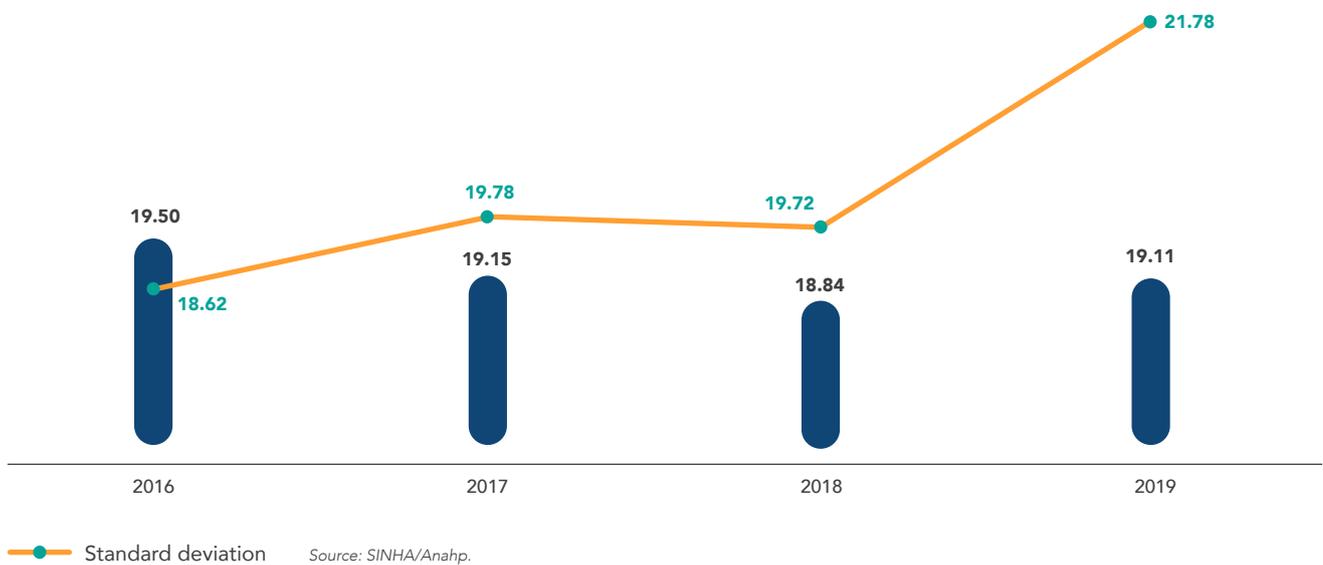


Rate of internal hires and average time to fill vacancies

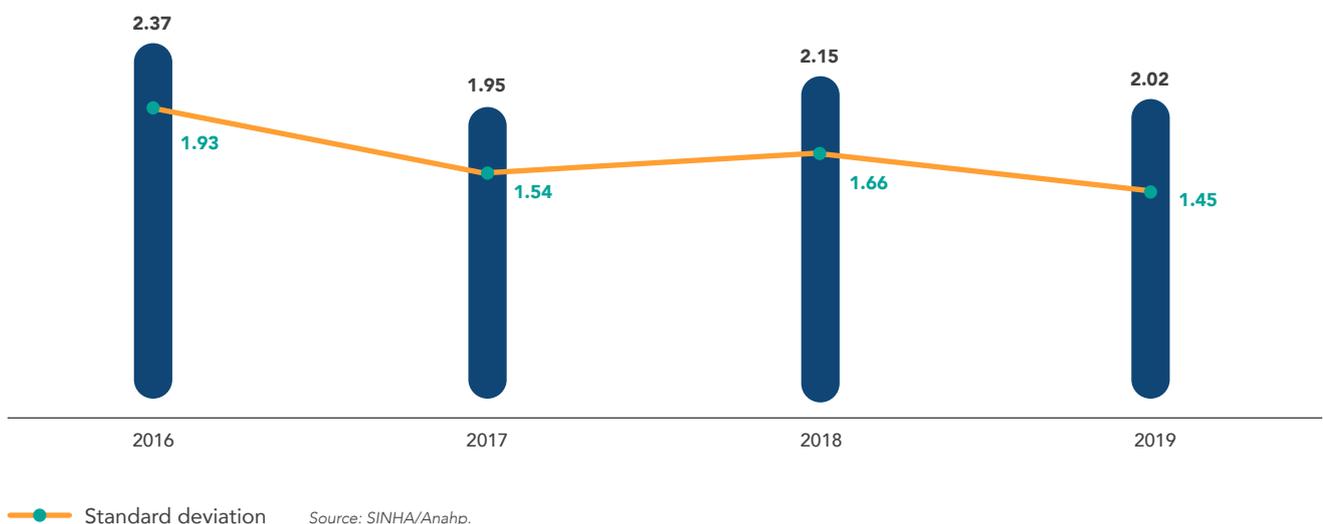
Organizations tend to invest in internal hires, in order to optimize time to hire and train. In that sense, the indicator internal hire rate was 19.11% in 2019, after two

years of fall (**Graph 6**). With this, the indicator training time presented a drop in 2019, in the comparison with the previous year, from 2.15 to 2.02 hours (**Graph 7**).

GRAPH 6 | Rate of internal hires (%) – Average of Anahp hospitals



GRAPH 7 | Training time of total headcount (in hours) – Average of Anahp hospitals

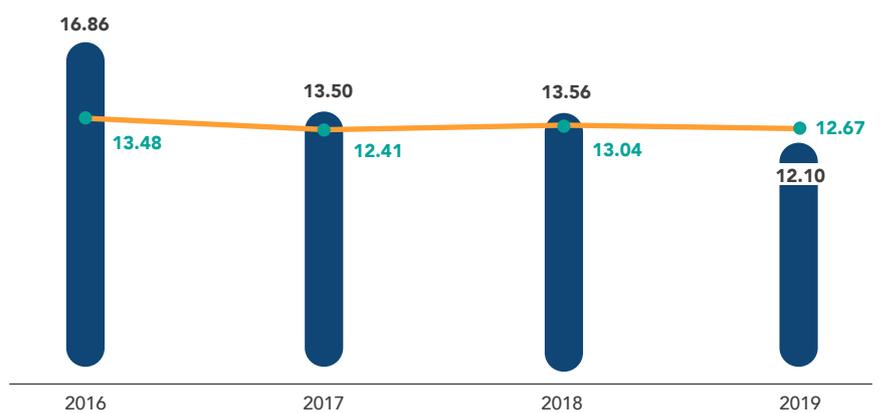




After two years of fall, the indicator internal hire rate was **19.11%** in 2019

The average time to fill vacancies (period between requesting the vacancy and the professional starting to work) fell from 13.56 days in 2018 to 12.10 days in 2019. This fall may also be explained by the rise in the internal hiring rate (**Graph 8**).

GRAPH 8 | Average time to fill vacancies (days) - Average of Anahp hospitals



—●— Standard deviation Source: SINHA/Anahp.

Occupational health and safety

Absenteeism is associated to many factors, such as stress, process changes, and susceptibility to diseases, which may be worsened by the multiple jobs some employees have. The monthly absenteeism¹ rate was 2.16% in 2019, practically stable in comparison with the previous year **(Graph 9)**.

Absenteeism due to unjustified

absence, however, presented a slight drop, from 0.59% in 2018 to 0.55% in 2019 **(Graph 10)**. It is important to say that, among Anahp members, absenteeism management has received attention, with organizations working for disease prevention and health promotion of the staff.

Even without a significant fall in absenteeism indicators, there

was a drop in overtime indicators, which are used to maintain hospital operations in case of absences and delays of employees. The total overtime indicator fell from 4.48% in 2018 to 3.95% in 2019, influenced mainly by the drop in the indicator overtime included in payroll, which fell from 1.58% to 1.22%, in the same comparison **(Graph 11)**.



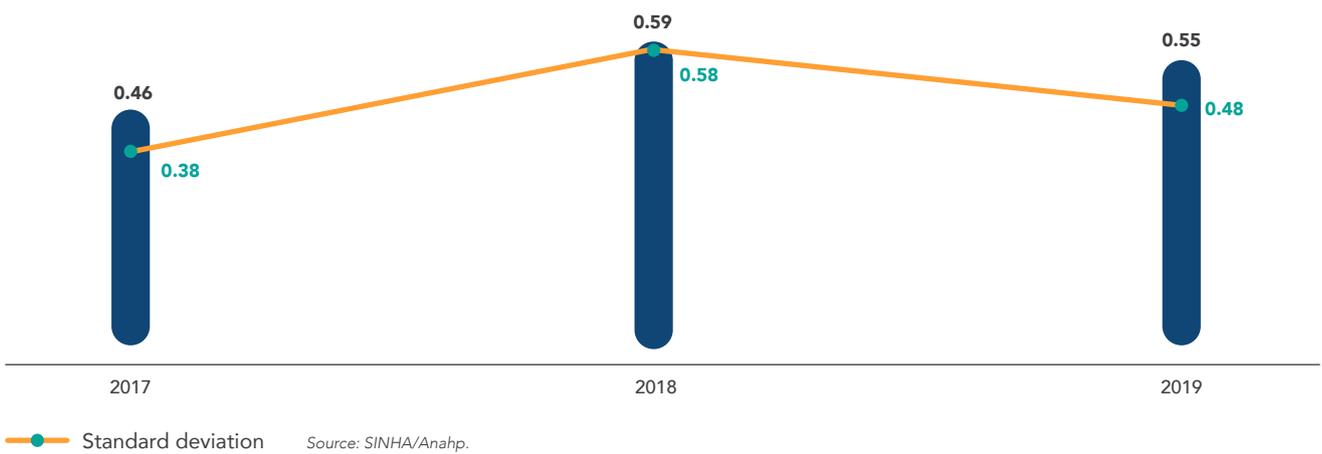
Among Anahp members, absenteeism management has received attention, with organizations working for disease prevention and health promotion of the staff

¹ The rate of absenteeism, which considers absences lasting for up to fifteen days, is the ratio between the total number of absent hours because of missed work days, delays or leaves of absences of the hospital's staff employees divided by the total number of work hours expected.

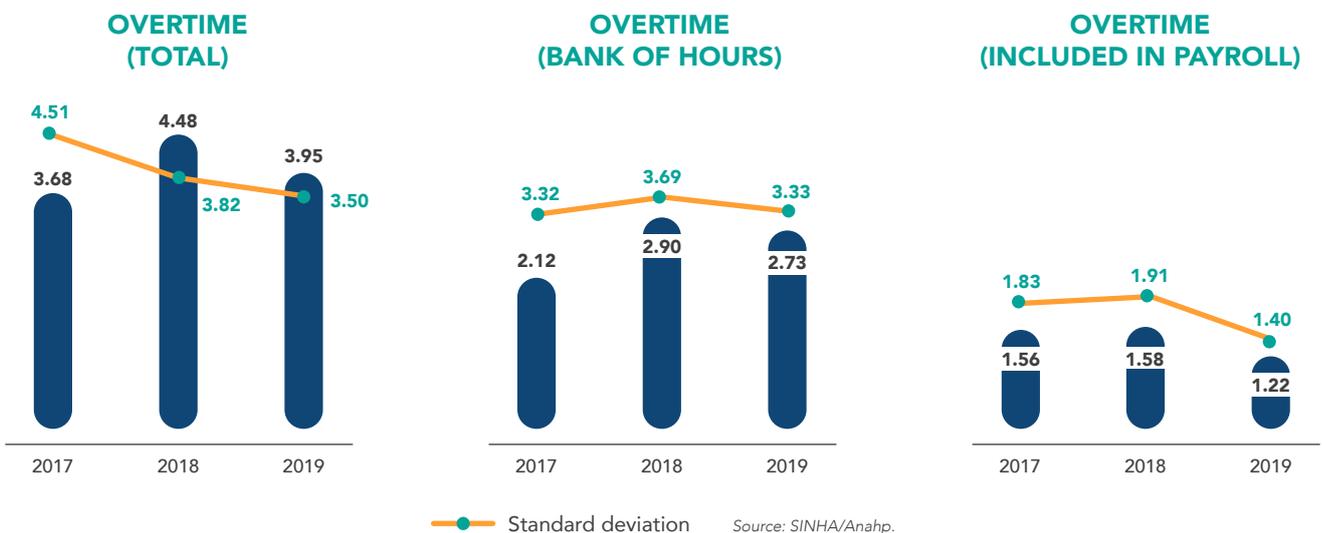
GRAPH 9 | Rate of absenteeism ≤ 15 days (%) – Average of Anahp hospitals



GRAPH 10 | Rate of absenteeism ≤ 15 days (%) due to unjustified absence – Average of Anahp hospitals



GRAPH 11 | Overtime (%) – Average of Anahp hospitals



The rate of leaves of absence has been falling in the past few years, and reached 4.75% in 2019 (Graph 12).

The reduction in that rate has a positive impact on the management of human resources in hospitals, considering that it reduces the demand for new hirings and investments in labor qualification.

Another indicator with a positive result is the number of work-related accidents, which has had the second year of

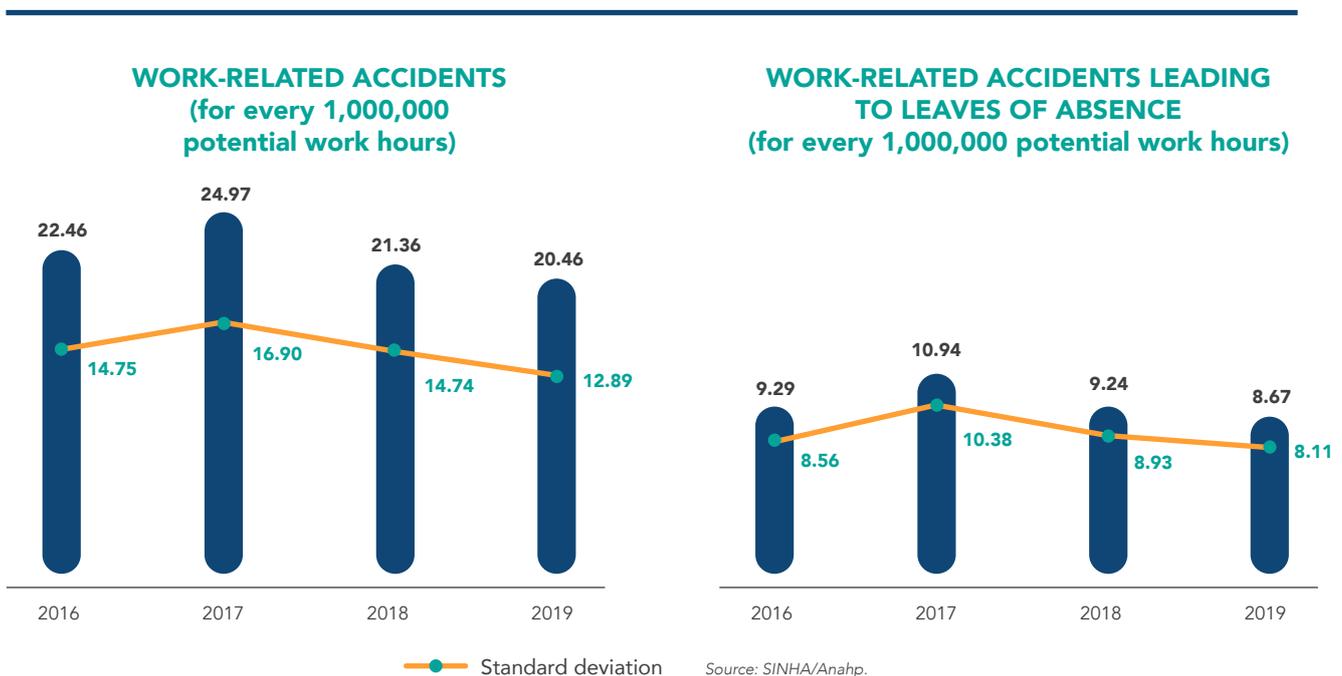
fall, reaching 20.46 for every 1 million potential work hours in 2019. Of those, the work-related accidents that resulted in leaves of absence also followed a falling trend and were 8.67 for every 1 million potential work hours in 2019 (Graph 13).

Regarding the accidents that occurred inside healthcare organizations, 2019 had a fall too, as the result of the increase in protection barriers provided to employees in the work environment (Graph 14).

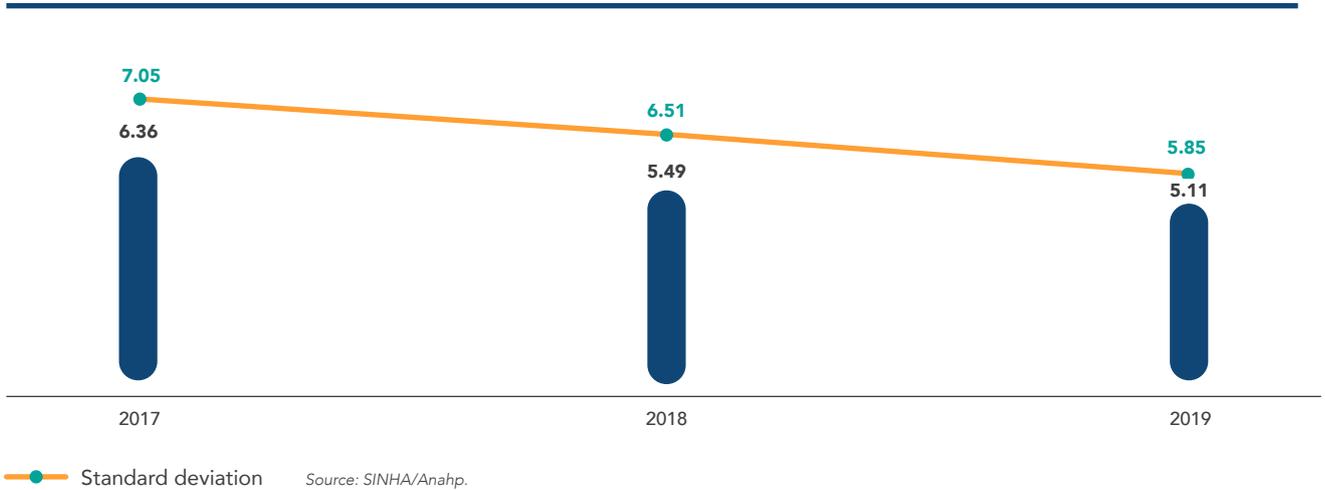
GRAPH 12 | Rate of leaves of absence (%) – Average of Anahp hospitals



GRAPH 13 | Work-related accidents – Average of Anahp hospitals



GRAPH 14 | Work-related accidents leading to leaves of absence that occurred in organizations (every 1,000,000 potential work hours) – Average of Anahp hospitals



Talent Retention

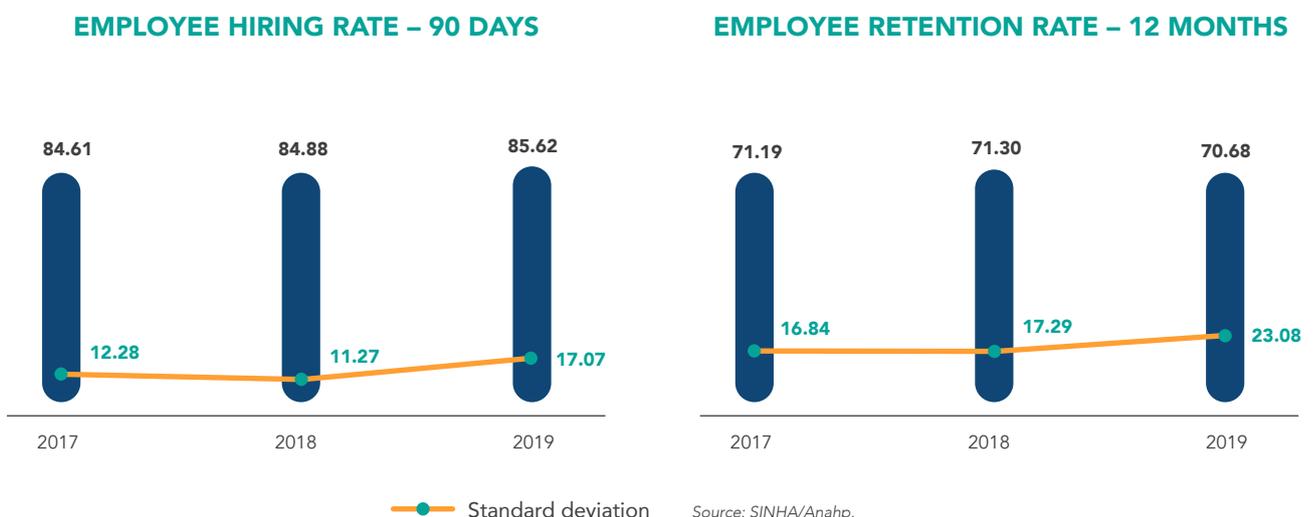
One of the great difficulties of the health industry is dealing with the growing demand and limited offer of highly qualified professionals. With the aim of comparing efficiency in hiring and retaining employees, to reduce training and development costs and to minimize care-related harms, Anahp started measuring

the indicators of talent hires and retention. These indicators serve, for example, to identify strategies to reduce turnover and absenteeism in organizations.

The employee hiring rate, which shows the percentage of hired employees who went through the initial trial period (three months),

has been increasing since 2017, when the indicator was first measured, and reached 85.62% in 2019. In turn, the employee retention rate (twelve months) presented a slight fall, from 71.30% in 2018 to 70.68% in 2019, which may be related to the turnover increase observed (Graph 15).

GRAPH 15 | Hiring rate and retention rate – Average of Anahp hospitals



Regional features of Anahp hospitals

With quite heterogeneous features, Anahp members are spread throughout Brazil (**Graph 16**); in this manner, the main people management indicators will be presented separately by region, as well as the number of formally hired employees (**Graph 17**).

GRAPH 16 | Anahp hospitals per region
December 2019

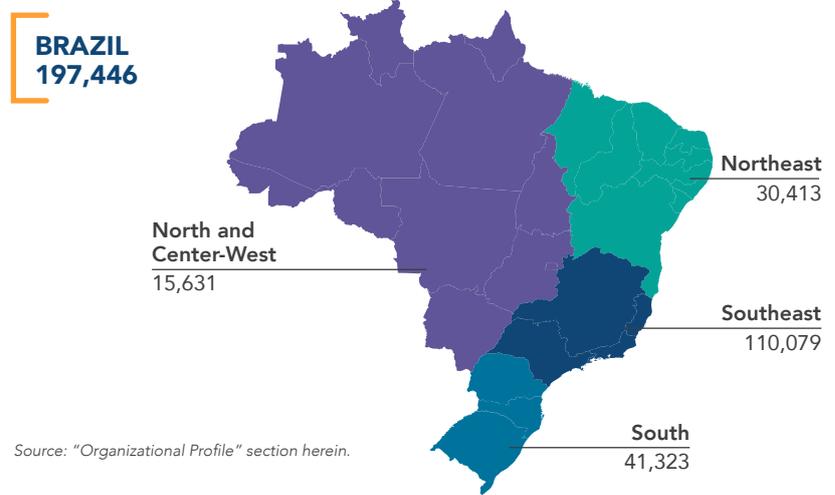


In 2019, Anahp member hospitals totaled **197,446** employees

Anahp’s member hospitals totaled 197,446 employees in 2019. The increase observed in headcount is related to the growth both in each hospital’s number of employees and in the number of Anahp member hospitals.

In this manner, Anahp hospitals accounted for 15.70% of the total number of formal employees in the hospital care industry.

GRAPH 17 | Formally hired employees of Anahp hospitals per region | December 2019



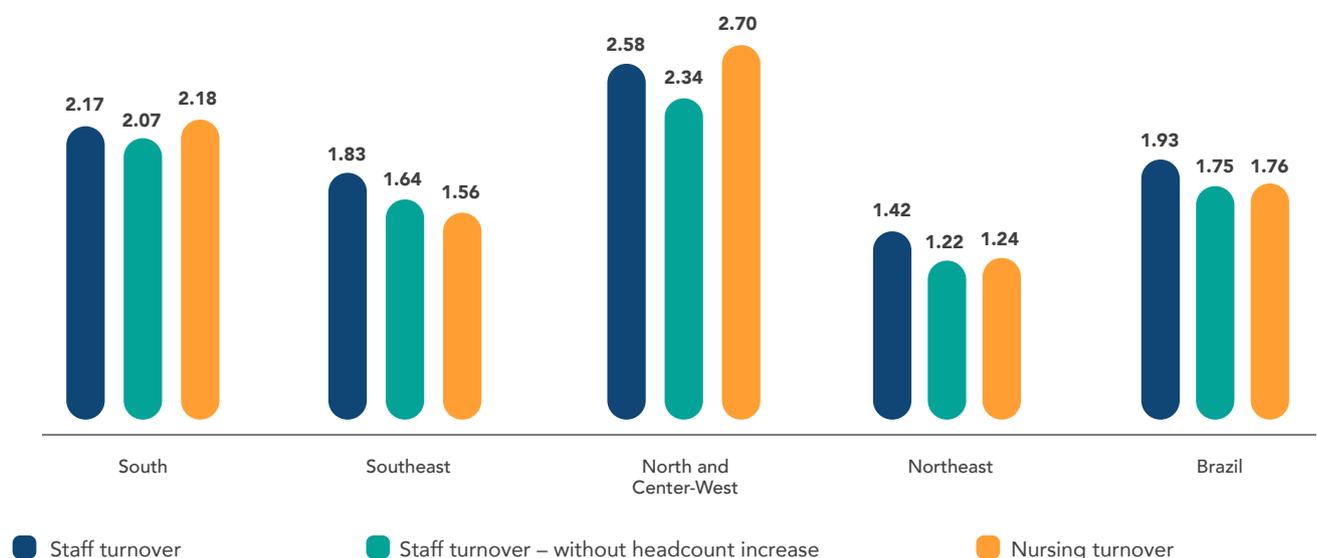
Among the indicators constantly monitored by members all over Brazil is turnover, which generates higher expenses with hiring and onboarding, in addition to the loss of knowledge and investments already

made in employee development, among other impacts.

The regional analysis of this indicator shows that that regions North and Center-West are the ones with the highest rates,

followed by region South. One of the concerning factors is that in these three regions average nursing turnover, directly related to patient care, is higher than that of other workers (**Graph 18**).

GRAPH 18 | Turnover indicators (%) – Average of Anahp hospitals per region | 2019



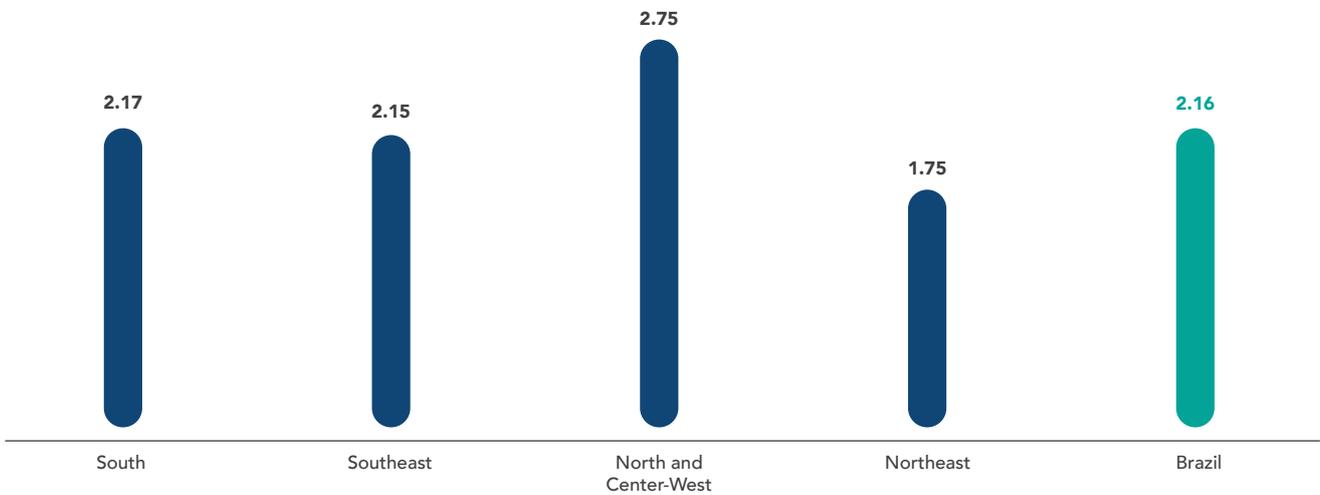
Regions North and Center-West also have higher absenteeism in relation to the other regions of the country (Graph 19), in addition to having the lowest personnel cost by net revenue in the comparison with the other regions and with Brazil average (Graph 20).

It is worth mentioning, however, that according

to the data presented in the chapter “Economic-Financial Management”, hospitals of regions North and Center-West are the ones that have the lowest net revenue per hospital discharge.

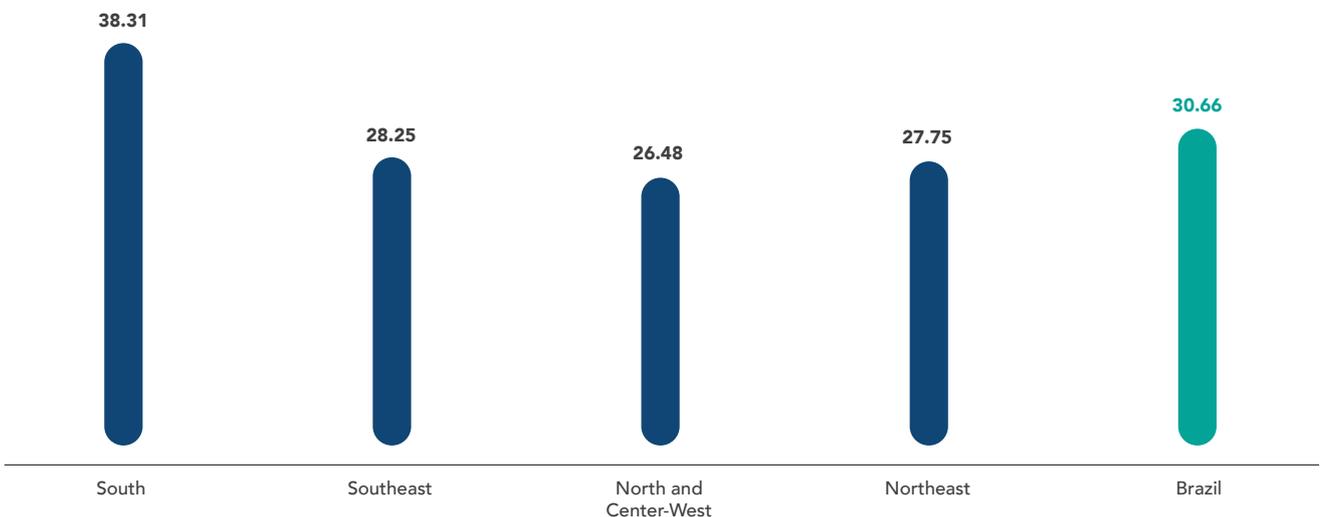
These regional indicators suggest a relationship between financial and people management indicators in Anahp hospitals.

GRAPH 19 | Absenteeism (%) – Average of Anahp hospitals per region | 2019



Source: SINHA/Anahp.

GRAPH 20 | Cost of personnel over net revenue (%) – Average of Anahp hospitals per region | 2019



Source: SINHA/Anahp.



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Environmental sustainability

The consumption of water and electric power and the generation of waste, directly related to the volume of care delivered, presented a growing trend compared to the previous year

Responsible consumption is essential for the sector's sustainability





It has been many years since environmental sustainability entered the radar of managers of the entire health chain in Brazil and in the world, mainly with the aim of reducing waste and optimizing resources.

The introduction of the environmental agenda into corporate practices brings new challenges to the management of hospitals. In this manner, Anahp and its members, through the Anahp Integrated System of Hospital Indicators (SINHA), use environmental sustainability indicators to, more objectively, measure the challenges and advances of the sector in the

incorporation of practices that promote sustainable development.

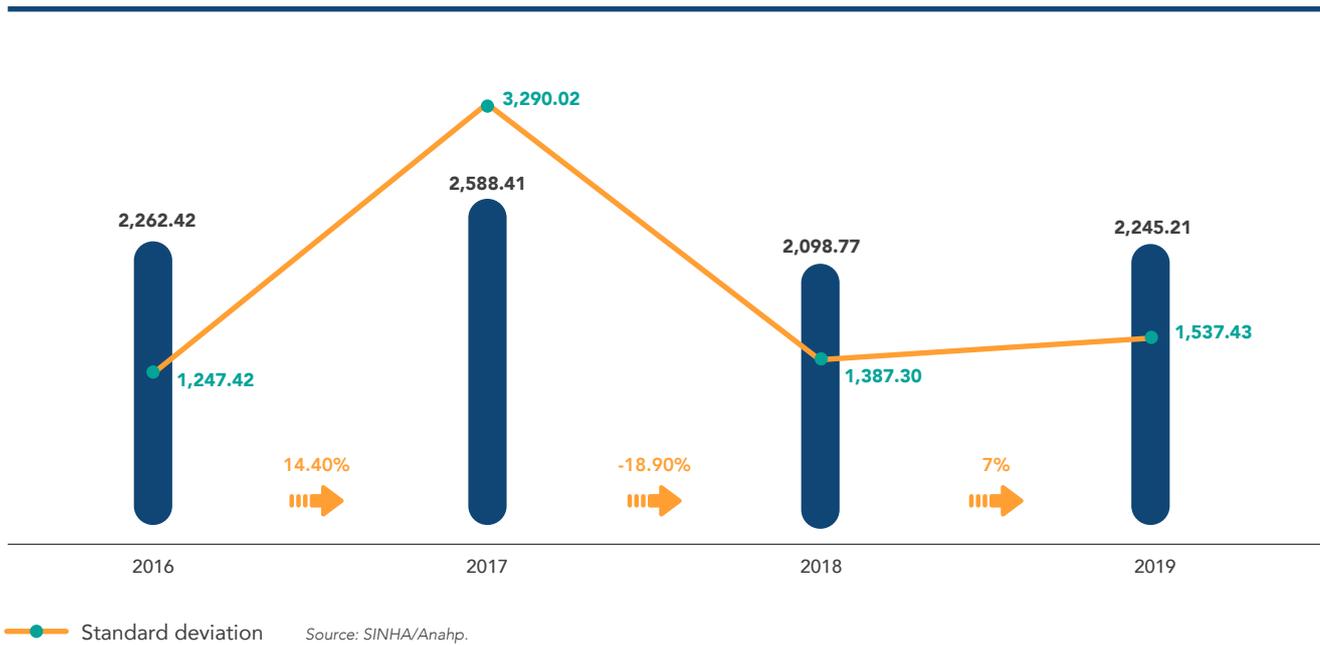
The consumption of water and electric power, and the generation of waste, on the one hand, are directly related to the volume care as patient-days, that is, the consumption of these resources tends to grow together with the demand of patient-days in the period. On the other hand, there is room to seek more efficiency in the use of resources and to reduce costs. As to costs, expenses with utilities, for example, accounted for 2.23% among Anahp members in 2019.

Consumption of electric power

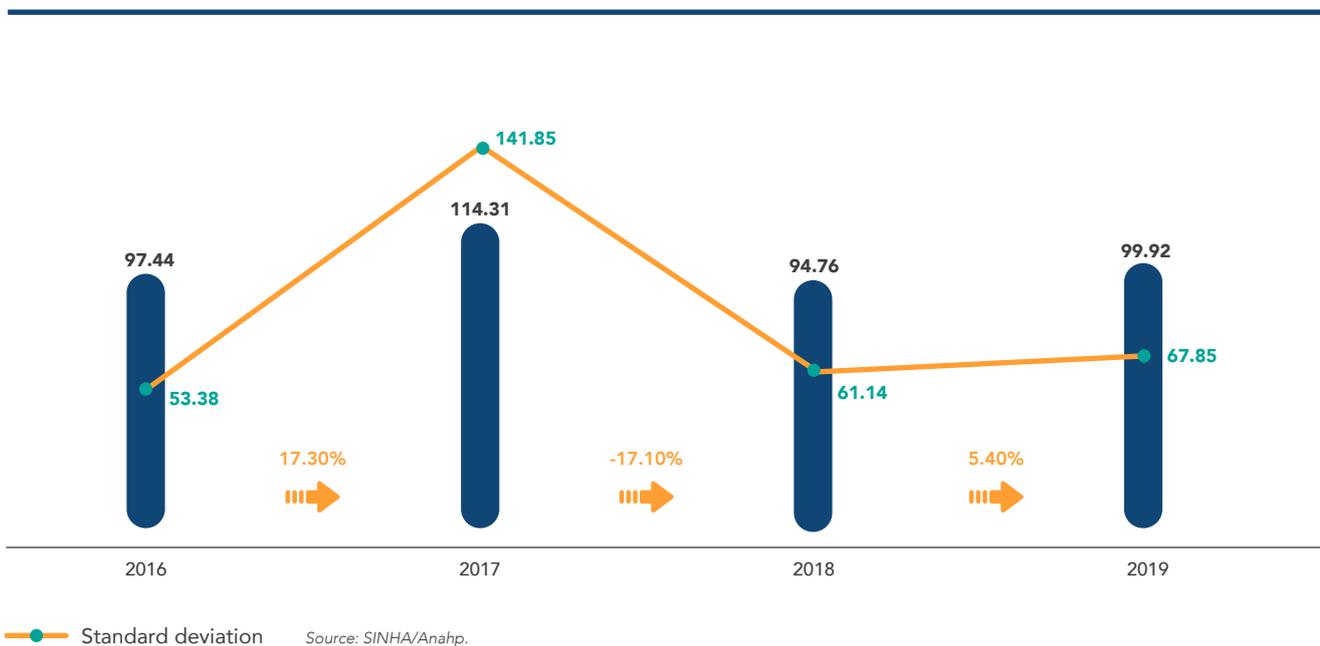
The consumption of electric power per operating bed grew 7% in 2019, after a fall of 18.90% in 2018 (Graph 1). Consumption per patient-day followed the

same trend, with a growth of 5.40% in 2019 vis a vis a fall of 17.10% in 2018 (Graph 2).

GRAPH 1 | Consumption of electric power in kWh per operating bed – Average of Anahp hospitals



GRAPH 2 | Consumption of electric power in kWh per patient-day – Average of Anahp hospitals

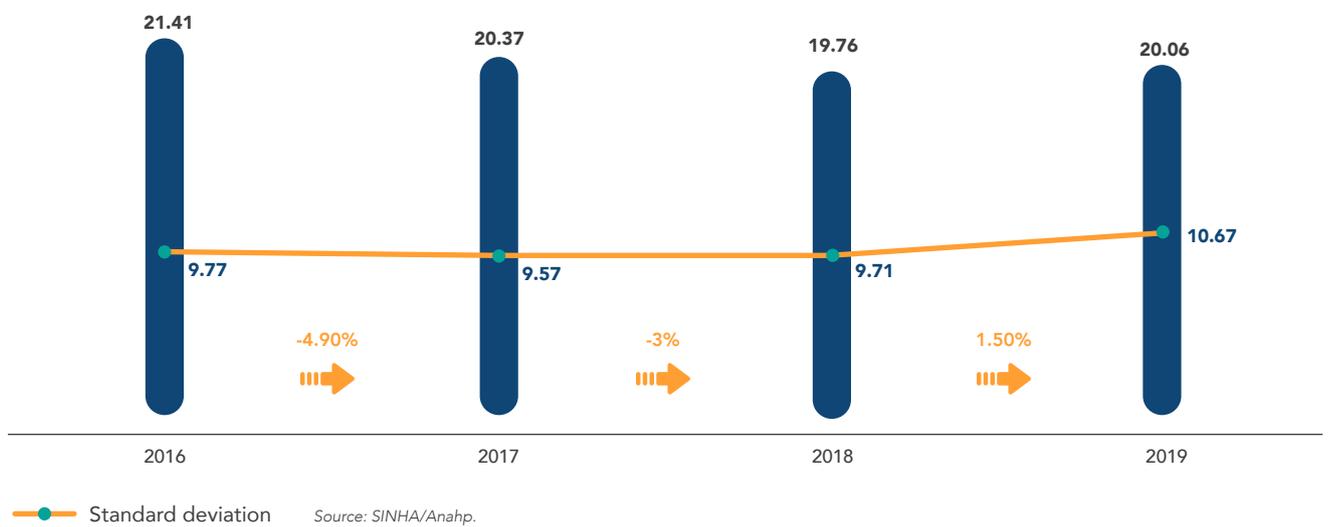


Water consumption

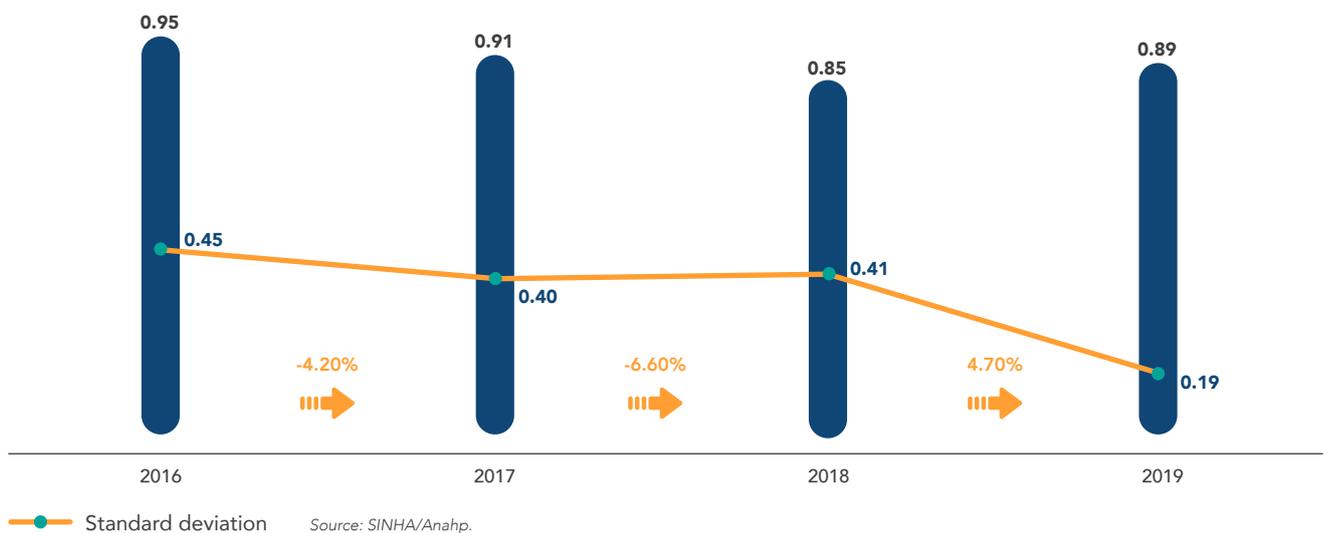
Water shortage in the past years in Brazil has certainly left as its legacy the implementation of initiatives for efficient water consumption. It is perceptible that, along years, the variation in water consumption indicators was small.

Average water consumption per operating bed went from 21.41 m³ in 2016 to 20.06 m³ in 2019 (**Graph 3**), while consumption per patient-day, which was 0.95 m³ in 2016, got to 0.89 m³ last year (**Graph 4**).

GRAPH 3 | Water consumption in m³ per operating bed – Average of Anahp hospitals



GRAPH 4 | Water consumption in m³ per patient-day – Average of Anahp hospitals



Waste

The waste that health services produce comes from the care provided to patients in any healthcare facility. We may mention as example syringes, plastic materials, gauze, and biological materials.

In order to mitigate the damages caused by the disposal of these materials, the National Health Surveillance Agency (Anvisa), through RDC N^o 33/03, which sets forth the Waste Management Plan for Health Services (PGRSS), established rules for the generation, segregation, packaging, collection, storage, transportation, processing, and final disposal of garbage.

The agency classified hospital waste in groups with common features, namely: group A, potentially infectious waste; group B, chemical waste; group C, radioactive waste; group D, common waste; group E, sharps and needles.

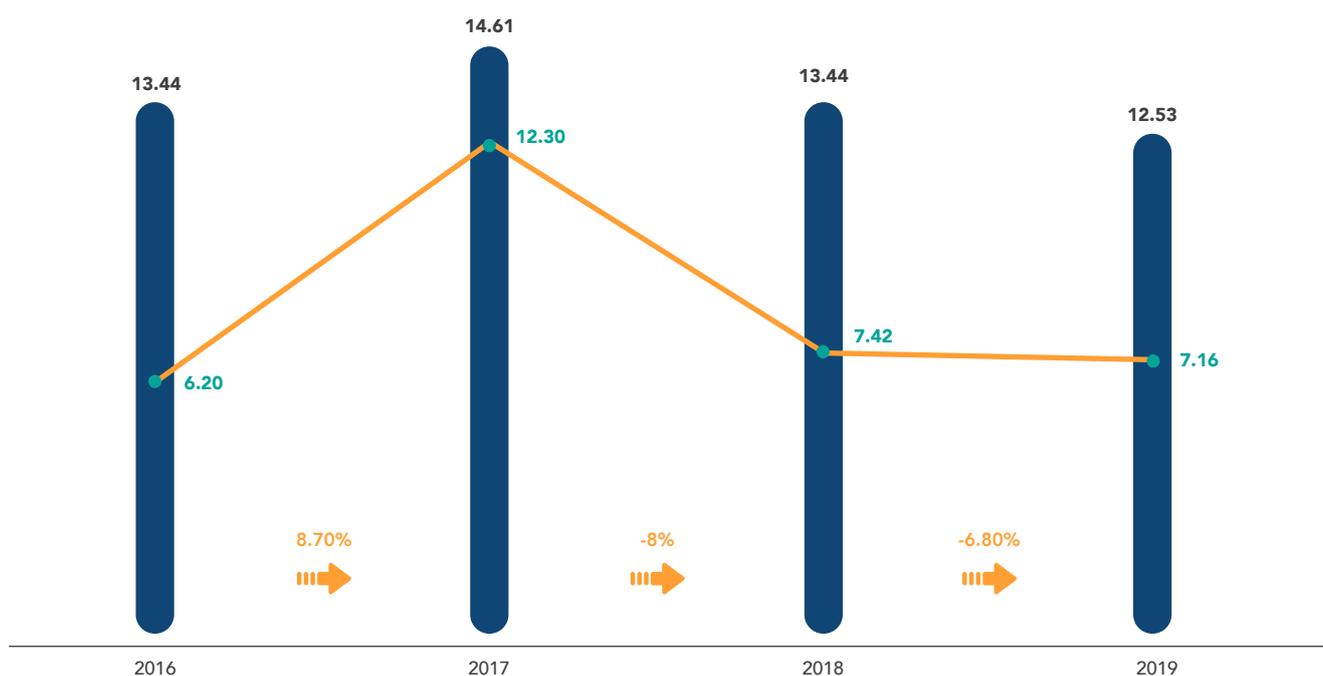
Anahp, with aim of incentivizing good practices, has been monitoring since 2014 the indicators related to hospital-generated infectious, nonrecyclable, and recyclable waste.

The variation of waste indicators, as well as water and electric power consumption indicators, are directly related to the number of medical and surgical patients who received care.

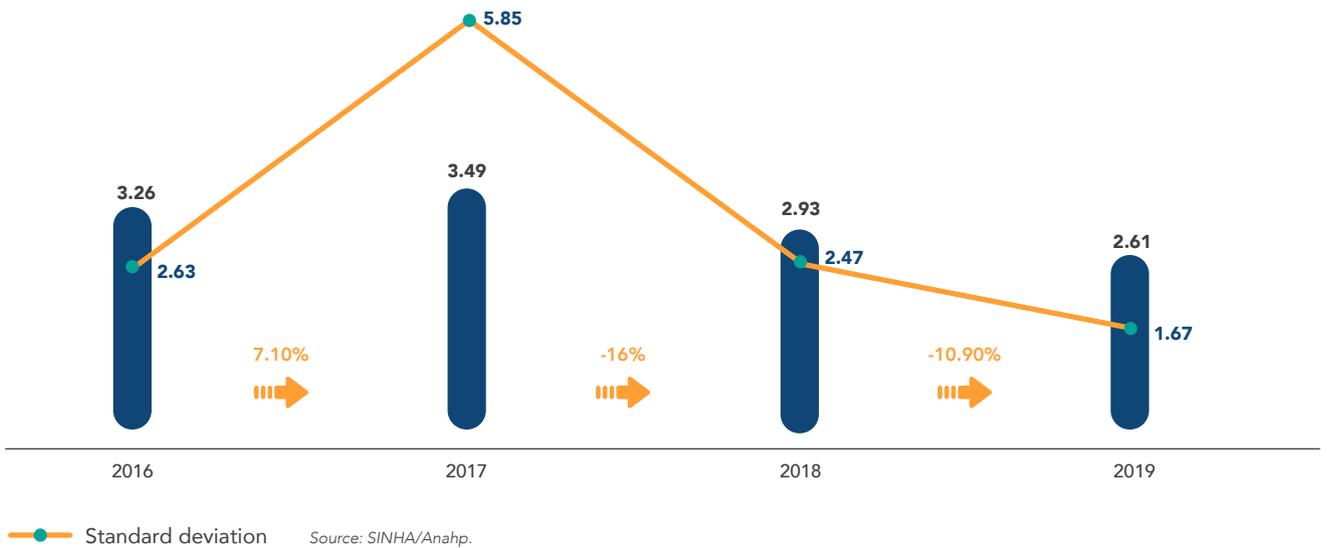
When analyzing 2019 data, it is possible to see that the total waste generation of Anahp hospitals has presented a falling trend since 2017, when the indicator started to be measured per patient-day (**Graph 5**).

Hospital-generated infectious waste (blood, culture media, tissues, organs, waste from isolation areas and clinicals analyses laboratories, sharps and needles, and others) also fell (**Graph 6**).

GRAPH 5 | Waste generation (infectious + recyclable + non-recyclable) per patient-day (kg) – Average of Anahp hospitals



GRAPH 6 | Hospital-generated infectious waste per patient-day (kg) – Average of Anahp hospitals



The total waste generation of Anahp hospitals has presented a falling trend since 2017, when the indicator started to be measured per patient-day

Information Technology

Technological integration provides speed in decision making by hospital managers

In addition to solving technical obstacles, an IT department that develops best practices is able to make correlations with data, thus optimizing the routine of the hospital team



Information technology (IT) is present in all links of the world's production chain, and it has been many years since it was about machines and software only, and now it is about its role as an information system.

Optimizing human resources, is undoubtedly one of the major drivers of any technology

department in organizations. In hospitals, the concern is even greater: making available to the staff and managers tools that will provide patients with the best experience they can have with the highest data safety possible.

Understanding the relevance of the matter, in 2015, Anahp and its members created the Information

Technology Work Group, with aim of sharing best practices and finding solutions for similar problems.

In 2019, members started, through the tools of the Anahp's Integrated Anahp Integrated System of Hospital Indicators (SINHA), to measure and benchmark service management indicators.

IT in Anahp hospitals

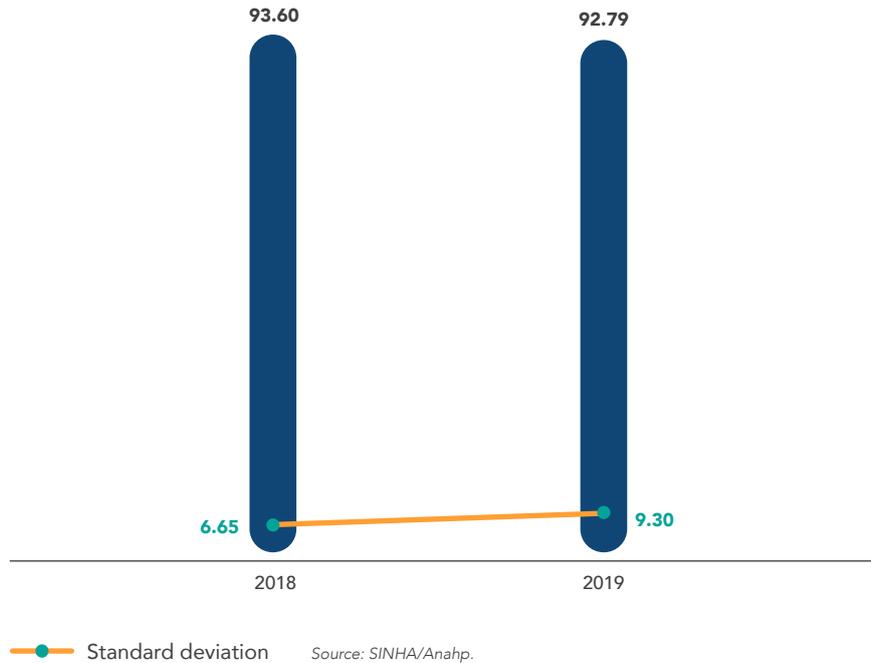
Controlling the main technology services in hospitals permits the effective management of processes, as well as adapting physical and financial resources. In addition, a particularly important role of information technology in organizations is to know and meet the demands of their internal customers.

Among the indicators selected for service management, Anahp members decided to start by those related to the qualification and interface with internal IT customers, that is, the employees of organizations.

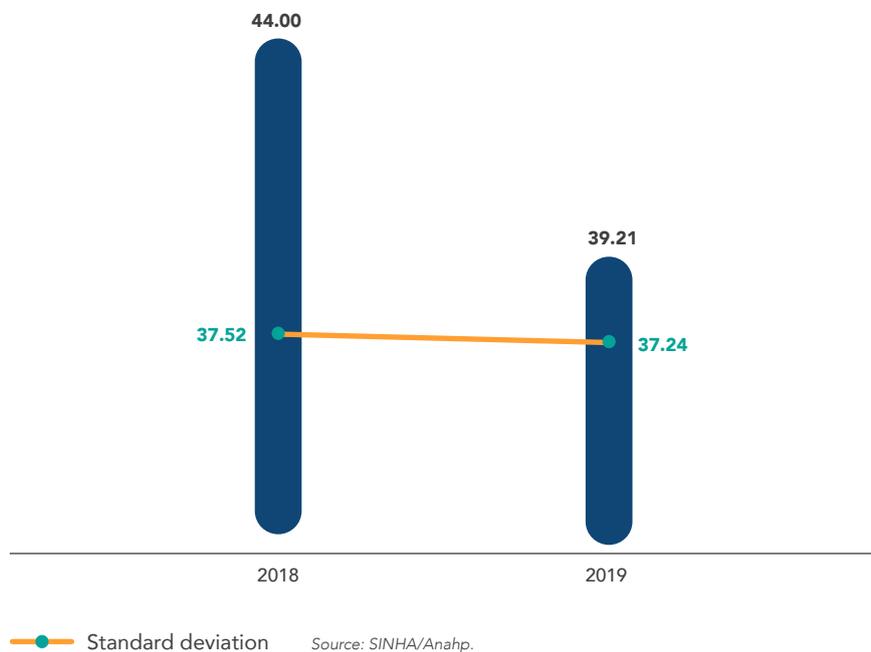
It is possible to see that the internal customer satisfaction rate, whose aim is to assess their opinion of the service desk, was high – above 90% – both in 2018 and in 2019 (**Graph 1**).

It is worth mentioning that, among Anahp members, only 39.21% of the total calls answered by IT were evaluated in 2019 (**Graph 2**).

GRAPH 1 | Satisfaction rate of IT internal customers (%) – Average of Anahp hospitals



GRAPH 2 | Effectiveness of the satisfaction research with internal IT customers (%) – Average of Anahp hospitals

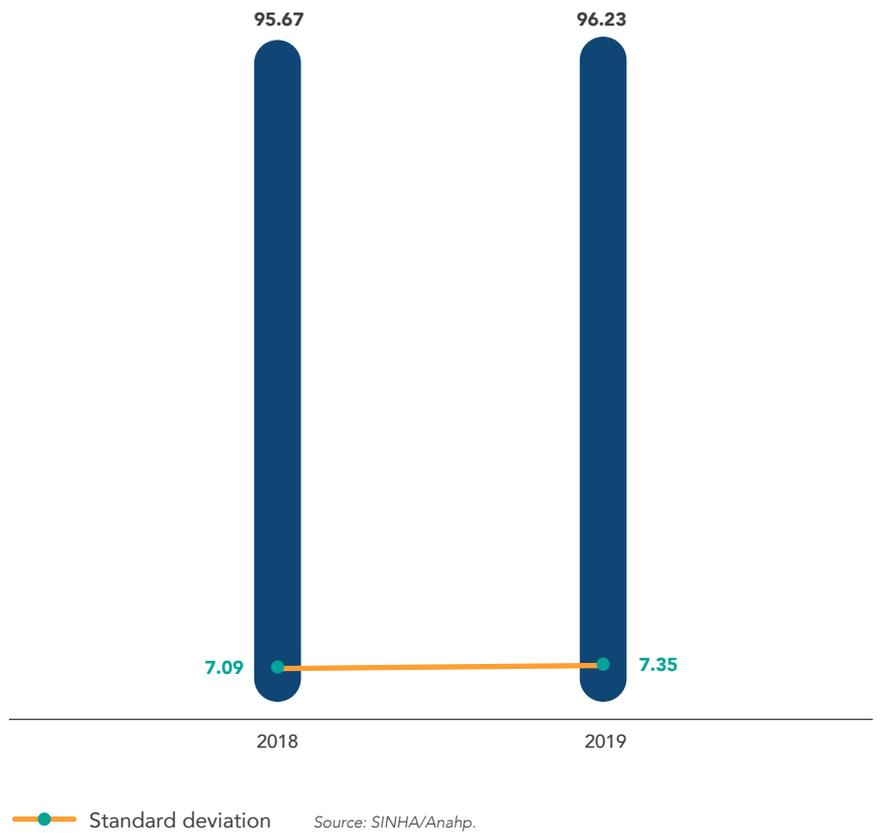


Another concern of technology departments in hospitals is problem solving, that is, if they manage to answer all demands of service orders placed by other departments. In 2019, among Anahp hospitals, 96.23% of the service orders were solved in the same month they were opened (**Graph 3**).

A theme that was quite relevant in the hospital industry in 2019 was data protection, mainly because of the General Data Protection Law (GDPR – General Data Protection Regulation), that will be enacted in the next few years.

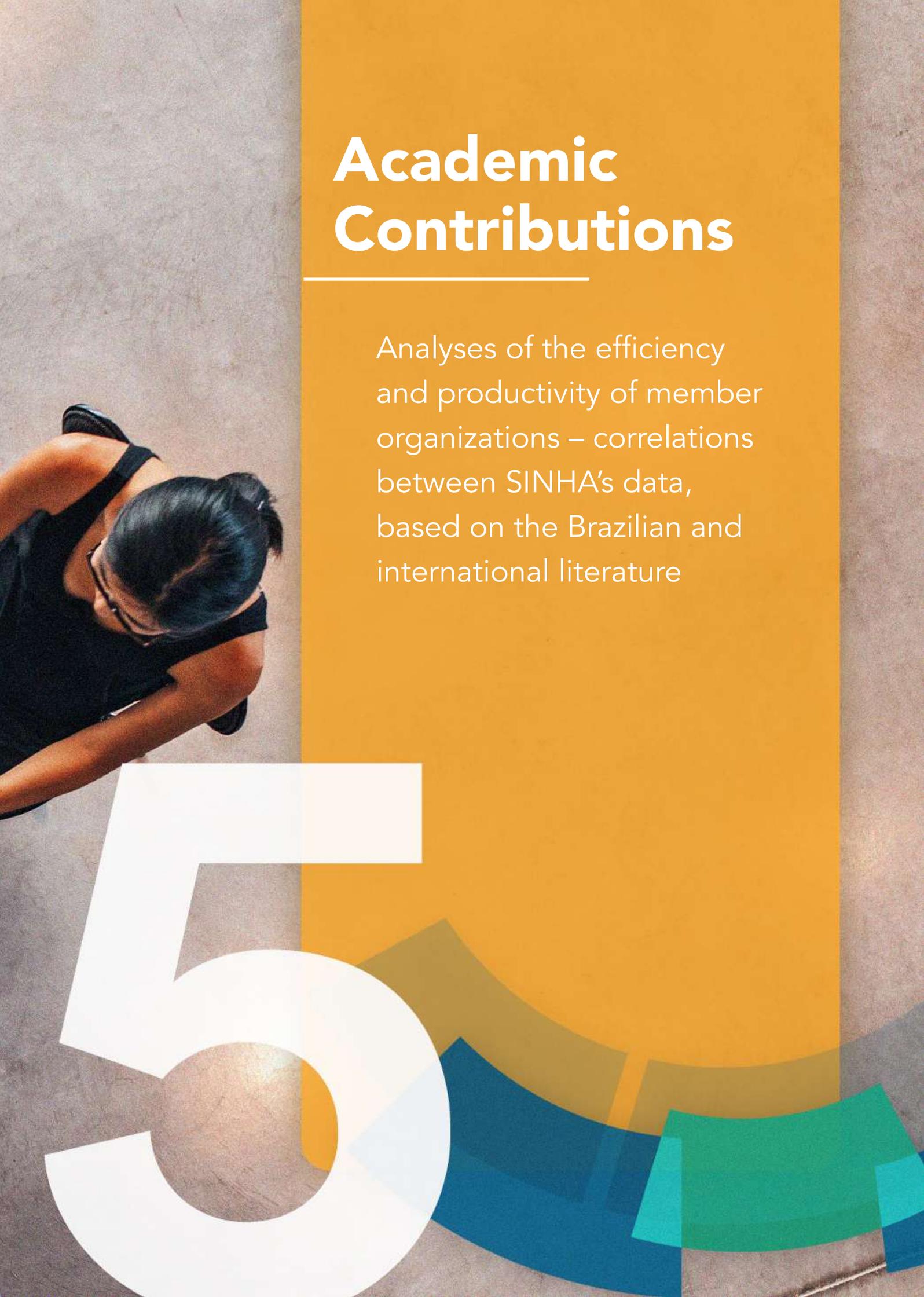
Anahp hospitals, together, identified the need to document the best practices and changes necessary for them to comply with this scenario. Thus, in November 2019, a manual filled with orientations on the LGPD was published.

GRAPH 3 | Rate of IT problem solving (%) – Average of Anahp hospitals



The satisfaction rate of internal customers, whose aim is to assess their opinion of the service desk, was above **90%**





Academic Contributions

Analyses of the efficiency and productivity of member organizations – correlations between SINHA's data, based on the Brazilian and international literature

Anahp Studies and
Analyses Group
(NEA) conducted
this chapter's
theoretical research





This chapter draws correlations between the indicators collected by Anahp Integrated System of Hospital Indicators (SINHA). The analyses were based on the academic literature and refer to data on quality and safety of care delivery, people management, operational management, and economic-financial management. The goal is to explore the relationship between the indicators of member hospitals to better understand them and to support more focused analyses that may contribute for improvements and decision making.

For calculation purposes, we used Spearman's correlation coefficient, which ranges from -1 to +1. Values close to -1 indicate a strong negative correlation, whereas values close to +1 indicate strong positive correlation. The closer to zero, the weaker the correlation. It is worth mentioning that the correlation does not necessarily indicate causality, but it only shows how much the variations of certain variables are associated to variations in others.



QUALITY AND SAFETY IN CARE DELIVERY

Average length of stay (days)



POSITIVE CORRELATION WITH:

Institutional mortality rate (0.54)

Institutional mortality rate \geq 24h (0.50)

The indicator average length of stay in days is positively and moderately correlated with the institutional mortality rate and with the institutional mortality rate with length of stay greater or equal to 24 hours. This suggests that, among the hospitals assessed, in general, those with highest average length of stay rates are those that present the highest mortality rates and vice-versa. The average length of stay may vary according to the reason for admission and, consequently, with severity of the pathology. A research that evaluated the clinical performance between public and private hospitals, in the region of Ribeirão Preto, in the state of São Paulo, showed that, although the correlation between mortality and length of stay was weak, the patients who died had an average length of stay greater than those who did not die (6.4 days and 5.5 days, respectively)¹.



¹ MARTINS, M.; BLAIS, R.; LEITE, I. C. "Mortalidade hospitalar e tempo de permanência: comparação entre hospitais públicos e privados na região de Ribeirão Preto, São Paulo, Brasil". In: Cadernos de Saúde Pública. Rio de Janeiro, v. 20, sup. 2, p. S268-S282, 2004. Available at: <doi.org/10.1590/S0102-311X2004000800021>; accessed on 14/Apr/2020.



The indicator incidence density of infection (pneumonia) associated to mechanical ventilation in patients staying in step-down units is negatively correlated with the number of nursing professionals (RNs, technicians, and assistants) per operating bed.

Studies show evidence that there is a strong relation between quality indicators and nursing workload in the analysis of indicators such as nursing hours, incidence of patient falls, incidence of medication errors, incidence pressure ulcers, incidence of infections, and patient satisfaction. It is important to make this inter-relation clear to understand its impact on patient safety and on the quality of the service provided².



QUALITY AND SAFETY IN CARE DELIVERY

Incidence density of ventilation-associated infection among patients staying in step-down units (%)



NEGATIVE CORRELATION WITH:

Number of registered nurses per operating bed (-0.47)

Number of nursing technicians and assistants per operating bed (-0.38)

² MONTEIRO, L. M.; SPIRI, W. C. "Indicadores de qualidade e carga de trabalho uma revisão integrativa em enfermagem". In: REME – Revista Mineira de Enfermagem. Belo Horizonte, n. 20, 2016. Available at: <www.dx.doi.org/10.5935/1415-2762.20160006>; accessed on 14/Apr/2020



PEOPLE MANAGEMENT

**Absenteeism (≤ 15 days)
monthly (%)**



POSITIVE CORRELATION WITH:

Rate of replacement
interval in step-down
units (days) (0.42)

**Training time to
entire staff (hours)**



NEGATIVE CORRELATION WITH:

Mortality rate (home care)
(-0.43)



A rate of absenteeism smaller or equal to fifteen days was positively correlated with the rate of replacement interval in step-down units. The literature³ also shows correlations between the rate of absenteeism of nursing technicians and indicators like incidence of

unplanned extubation, incidence of loss of nasogastric and nasoenteral tube, incidence of skin ulcers and incidence of loss of central line, as well as between the nursing turnover and care delivery quality indicators, for example incidence of unplanned extubation.

³ LEITÃO, I. M. T.; SOUSA, F. S. P.; SANTIAGO, J. C. S.; BEZERRA, I. C.; MORAIS, J. B. "Absenteeismo, rotatividade e indicadores de qualidade do cuidado em enfermagem: estudo transversal". In: Online Brazilian Journal of Nursing. Niterói, v. 16, n. 2, p. 119-129, 2017. Available at: <www.objnursing.uff.br/index.php/nursing/article/view/5623/html_2>; accessed on 14/Apr/2020.



Staff training time is negatively correlated with the mortality rate of home care patients.

It is important highlight that good team management leads to higher care delivery quality, more satisfied patients, and lower patient mortality rates. Organizations where workers receive more training have better results⁴.

⁴ WEST, M. A.; DAWSON, J. F.; ADMASACHEW, L.; TOPAKAS, A. NHS Staff Management and Health Service Quality: Results from the NHS Staff Survey and Related Data. Report to the Department of Health. Available at: <<https://www.gov.uk/government/publications/nhs-staff-management-and-health-service-quality>>; accessed on 14/Apr/2020.



ECONOMIC-FINANCIAL MANAGEMENT

Working capital ratio



NEGATIVE CORRELATION WITH:

Average length of stay
in step-down unit (days) (-0.51)



POSITIVE CORRELATION WITH:

Bed turnover rate
in step-down unit (days) (0.52)

The working capital ratio was positively correlated with the turnover rate of the step-down unit and negatively correlated with the average length of stay in the step-down unit.

The working capital ratio measures a company's payment capacity in relation to its obligations with suppliers and employees. The bed turnover rate represents the utilization of operational beds in a given period: the higher the rate, the better. The average length of stay represents the average number of days patients stay in the hospital: more efficient care suggests shorter length of stay.

Quality indicators and economic and financial indicators are related, because organizations with better economic-financial performance have the best quality rates, and vice-versa⁵.



⁵ RAMOS, F. M.; PARIZOTTO, E. L.; SILVA, A. S.; RAMOS, J. M.; BAMPI, J. B. "Relação entre indicadores de qualidade e econômicos: um estudo em uma rede de hospitais do terceiro setor do Sul do Brasil". In: Cadernos Saúde Coletiva. Rio de Janeiro, v. 26, n. 4, p. 453-461, 2018. Available at: <doi.org/10.1590/1414-462x201800040196>; accessed on 14/Apr/2020



Soluções Pyxis™ ES

São projetadas para ajudá-lo a melhorar a segurança do paciente, otimizar os esforços e reduzir custos.

Hospitais e sistemas de saúde devem encontrar novas maneiras de melhorar a eficiência operacional, ajudar a manter o foco no cuidado e segurança do paciente, além de simplificar e padronizar o gerenciamento de medicamentos.

As soluções Pyxis™ ES são projetadas para profissionais que buscam soluções que melhorem a segurança do paciente, economizem dinheiro e forneçam uma integração significativa entre os sistemas clínicos do hospital e a Tecnologia da Informação em Saúde.

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