

The Costa Rican Social Security Fund: The Cornerstone of the Costa Rican Health System

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Abstract

This paper provides a comprehensive description of the Costa Rican health system, focusing on the Costa Rican Social Security Fund (CCSS). The CCSS is the cornerstone of the country's healthcare infrastructure, offering a range of medical, social, and economic benefits. We cover the historical evolution of the CCSS, its organizational structure and financing mechanisms, and levels of healthcare services provided, including primary, secondary, and tertiary care. We also discuss the integration of digital health records and the roles of various governmental and quasi-independent institutions within the health sector. Costa Rica maintains a strong position in terms of healthcare personnel availability and GDP per capita in the Central America region. However, challenges remain, particularly in ensuring the financial sustainability of the CCSS and addressing healthcare access disparities between urban and rural areas. The paper underscores the importance of continued investment in health infrastructure, professional training, and health promotion to enhance healthcare quality and equity. We conclude by highlighting the need for strategic adaptations to meet emerging health demands, optimize resource allocation, and leverage technological advancements. These efforts are essential to maintain high-quality, equitable healthcare services for all Costa Rican citizens and to ensure the long-term sustainability of the CCSS.

Keywords

Costa Rica, Central America, Costa Rican Social Security Fund, Caja Costarricense de Seguro Social, Health System, Healthcare Infrastructure, Health Promotion, Digital Health Records, Healthcare Access, Financial Sustainability

1. Introduction to the Costa Rican National Health System

The basic components of the Costa Rican National Health System (Sistema Nacional Salud, or SNS) were outlined in 1979. The roles of different organizations that constitute the Costa Rican health sector, including the Costa Rican Institute for Research and Teaching in Nutrition and Health (Instituto Costarricense de Investigación y Enseñanza en Nutrición y Salud, or INCIENSA), the Institute on Alcoholism and Drug Dependence (Instituto sobre Alcoholismo y Farmacodependencia, or IAFA), the National Insurance Institute (Instituto Nacional de Seguros, or INS), the Costa Rican Institute of Aqueducts and Sewers (Instituto de Acueductos y Alcantarillados, or AyA), the municipalities, and the private sector, were specified on February 15, 1983, in an executive decree. This decree detailed the functions of each institution within the sector, some of which had been created several decades earlier [1]. While the 1983 decree specified roles of these government organizations, the SNS was formally initiated in 1989 with the promulgation of Executive Decree No. 19276-S. This decree integrated government institutions and other entities, with their functions detailed in Article 11 of the health regulations (Executive Decree No. 19276-S of 1989) [2]. According to this decree, the specific functions include (Figure 1):

- Ministry of Health (Ministerio de Salud, or MDS): Defining health policies and actions.
- Costa Rican Social Security Fund (Caja Costarricense de Seguro Social, or CCSS): Providing medical care and social security.
- INS: Preventing accidents and providing medical care for injured people.
- AyA: Managing drinking water and water services.
- Universities: Training health professionals.
- Private sector: Providing medical care and services.
- Municipalities: Administering community services.
- Community: Participating in and promoting health.

The SNS comprises the MDS, the CCSS, and several quasi-independent institutions such as the INCIENSA, the IAFA, the INS, the AyA, municipalities, and private sector entities that offer various health services [2]. The objectives of the SNS are to provide quality health services to all, facilitate community participation in defining needs and using resources, promote effective and equitable resource management and intersectoral collaboration, and ensure coherent health legislation to support health goals and policies.

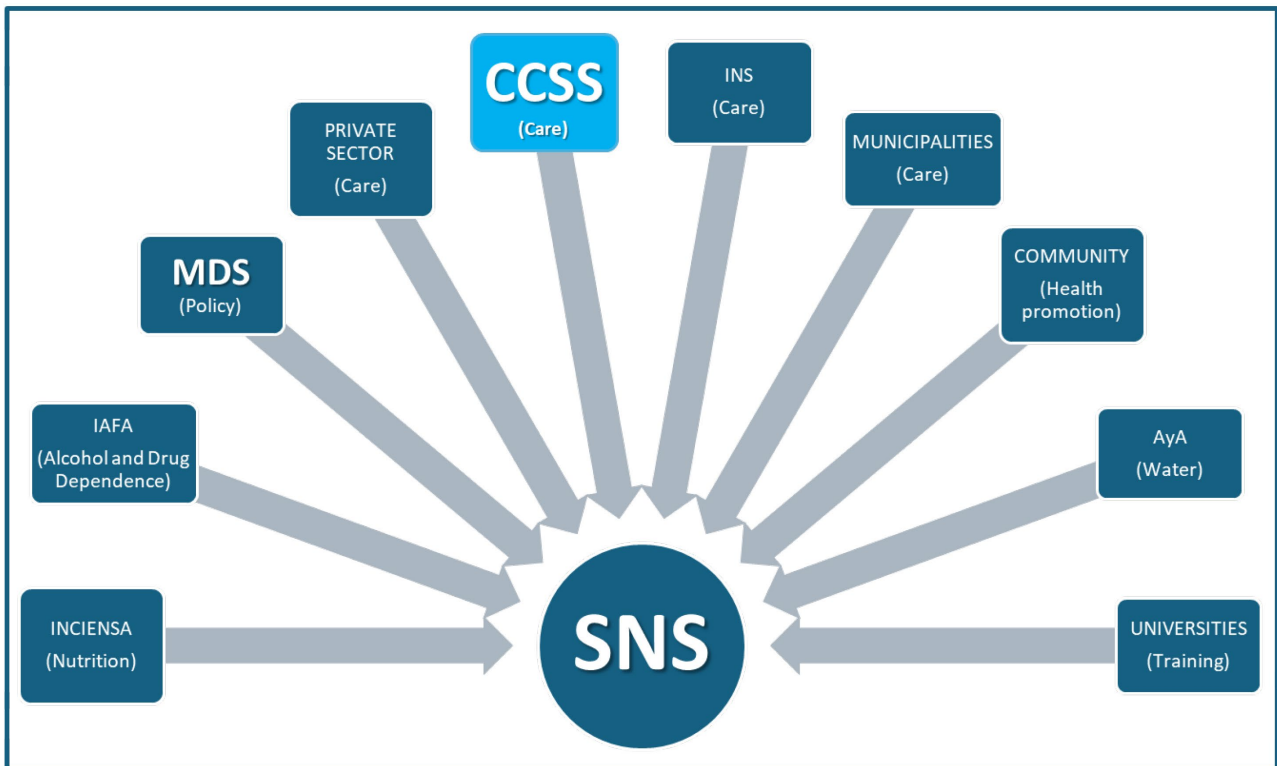


Figure 1. Components of the Costa Rican national health system (SNS).

As stated in Article 42 of the health regulations, specific functions of the SNS include reducing disease, preventing death, and improving the physical and mental health of the population [3]. Additionally, these functions strive to: encourage and support community participation in health promoting activities; improve the administration and effectiveness of local health services; strengthen subsystems such as occupational health, environment, information, and planning; identify medical care-related financial needs; and develop programs for efficient resource use. The SNS includes institutions that are responsible for providing all health, some economic, and some social benefits to citizens, as follows:

Health Benefits:

- INS: Addresses work-related accidents, occupational diseases, and traffic accidents [4] [5].
- CCSS: Provides medical assistance, hospital care, pharmaceutical services, dentistry, monetary subsidies, funeral expenses, and social benefits.
- Private sector: provides services for a fee.

Economic Benefits:

- Pensions: Ensures income for retired workers through different schemes. CCSS oversees the Non-Contributory Retirement Plan and Disability (Regimen No Contributivo o RNC), Old Age, and Death Regime (Régimen Invalidez, Vejez y Muerte, or IVM).
- Subsidies: Provides income in special situations, such as non-work-related accidents and illnesses.

Social Benefits:

- Joint Social Welfare Institute (Instituto Mixto de Ayuda Social, or IMAS): Offers support for housing, food, and care for the elderly.
- Office for the Control of Family Allowances of the Ministry of Labor and Social Security (Fondo de Desarrollo Social y Asignaciones Familiares, or FODESAF): Caters to children, grants pensions, and provides school meals.
- National Board of Children's Welfare (Patronato Nacional de la Infancia, or PANI): Provides temporary shelter, foster homes, and economic protection for children.

2. The Costa Rican Social Security Fund (CCSS)

The CCSS was created as a semi-autonomous entity on November 1, 1941, by Law No. 17 during the administration of President Rafael Ángel Calderón Guardia. It underwent significant reform on October 22, 1943, becoming an autonomous institution dedicated to serving the working population through a tripartite financing system. The CCSS is the core of the SNS, governing, managing and administering health services [6]. CCSS also manages the public pension system. Its formation and operation are specified in Articles 73 and 177 of the Political Constitution of the Nation. Article 73 establishes that social insurance is provided for all workers, financed by mandatory contributions from the government, employers, and workers [3]. Insurance coverage for workers' spouses, children, siblings, parents, and other dependents also is provided. These insurances cover costs for health care services associated with illness, disability, maternity, old age, and death. CCSS also provides support related to unemployment, adverse family situations, and burial costs unless death is due to a work-related illness or injury.

CCSS enrollment and coverage are mandatory for all workers who receive a salary from an employer. The amount paid is calculated based on total worker remuneration received. Employers are not required to make contributions for family members who are unpaid and live and work with the employer. In addition, they are not required to make contributions for most workers already retired or pensioned by the government unless certain criteria are met; if so, the employer is required to make contributions for illness and maternity insurance. CCSS legislation also allows the unemployed to purchase insurance (called Voluntario) if they wish. Independent (self-employed) workers are required to pay for insurance. The CCSS is not under the government's mandate in terms of budget and policies, except for government employees. CCSS funds cannot be used for purposes other than those originally specified in Articles 73 and 177 of the Constitution. Health care insurance for work accidents is the exclusive responsibility of employers, with care provided by the INS.

3. Programs Administered by the CCSS (Figure 2) [7] [8]

As noted above, the CCSS manages the two main types of insurance programs: health insurance and pensions. It also offers the RNC, as described below.



Figure 2. Structure of the CCSS.

3.1. Health Insurance [8]

Health insurance, known as the Sickness and Maternity Insurance (Seguro de Enfermedad y Maternidad, or SEM), was established in 1942 with the primary purpose of providing medical care, economic support, and social assistance to insured workers and their respective families. SEM provides a range of essential services that include general, specialized, and surgical medical care as well as cash subsidies (sick leave), pharmaceutical services, laboratory tests, dental care, and social benefits (i.e., financial assistance for transportation, funeral expenses, and the purchase of prostheses, glasses, and orthopedic devices).

Individuals who meet the minimum number of work-related financial contributions and their first-degree dependents are automatically covered, and second-degree relatives who meet certain minimum requirements may apply to be covered by the worker’s coverage. Self-employed individuals who are able to pay for health insurance yet choose not to are not covered.

The concept of family protection, regulated by Article 12 of the health regulations, establishes that spouses, children, siblings, parents, and other dependents of the direct policyholder are entitled to insurance coverage. This includes minors and young people between 18 and 22 years old, or up to 25 years old if they are students, as well as people with severe disabilities. For minors not covered by family insurance, the government assumes the responsibility of providing them with insurance coverage.

There are some situations in which SEM does not respond for coverage. In line with the Occupational Risk Law number 6727 of March 24, 1982, Article 16 of the health regulations stipulates that coverage of health care services for cases related to work accidents are the responsibility of the employer or the INS. Meanwhile, traffic accidents, regulated by the Traffic Law N°7331 of April 13, 1993, are the responsibility of the INS or the person deemed responsible for the accident, depending on the circumstances.

3.2. Pension Insurance [9] [10]

IVM, the pension insurance system of the CCSS, was established in 1947. Its main objective is to guarantee basic pension protection for both the insured and their family members. IVM has many more contributors than private sector pension insurance systems and is the largest in terms of managed assets. Insured men and women who, respectively, reach the age of 61 years and 11 months or 59 years and 11 months are entitled to retire and receive an “old age pension” provided they have made the minimum number of contributions to the retirement system over time. The CCSS disability benefit is available to insured persons under 65 years who have made the minimum number of work-related financial contributions according to their age. This benefit is awarded to those who, due to a change or weakening of their physical or mental abilities, have lost two-thirds or more of their capacity to perform their usual profession or activity.

3.3. The RNC [9]

The RNC provides economic support to those whose monthly income is equal to or lower than the current poverty line, as calculated by the National Institute of Statistics and Census (Instituto Nacional de Estadística y Censos, or INEC). The RNC was established in 1974 and has become one of FODESAF’s most important programs. Its purpose is to grant pensions to impoverished citizens over age 65 years or with disabilities who do not qualify for a government or other pension. In addition, orphans under age of 18 years and widows over age of 55 years and their children under 18 years may qualify, as may homeless people who meet the poverty threshold.

The financing of the RNC comes from multiple sources, including 20% of IMAS’ government funding; a percentage of taxes generated by the sale of liquors and cigarettes; earnings of the lottery of the Social Protection Board; at least 10% of collected income tax; and a 5% surcharge on the payrolls of both public and private employers. Currently, the RNC system comprises both the Ordinary Pensions Program and the Program for Deep Cerebral Palsy Pensions and other conditions, as established in Law 8769.

4. Types of Insured Individuals (Data 2020) (Table 1 and Figure 3)

Table 1 and **Figure 3** display the distribution of categories for direct and pension insurance coverage. **Figure 3** specifically shows the distribution of individuals by type of insurance [7] [11]. According to the 2020 CCSS institutional report, 92% of the population in Costa Rica had some form of health insurance. Of those, 34% had direct insurance 29% were dependents of a directly insured person, 17% were insured by the government, and 12% were covered through pensions. Special condition groups accounted for 8% of the insured population, and 1% had student insurance. Seventy-three percent of those with direct insurance were salaried workers. Only 8% of the population was uninsured.

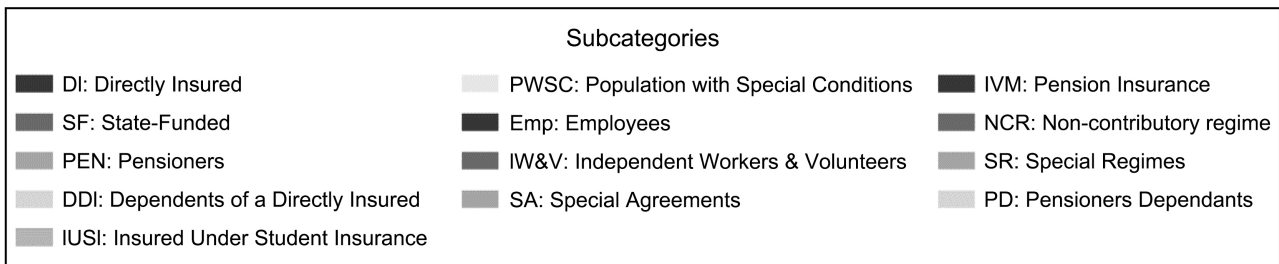
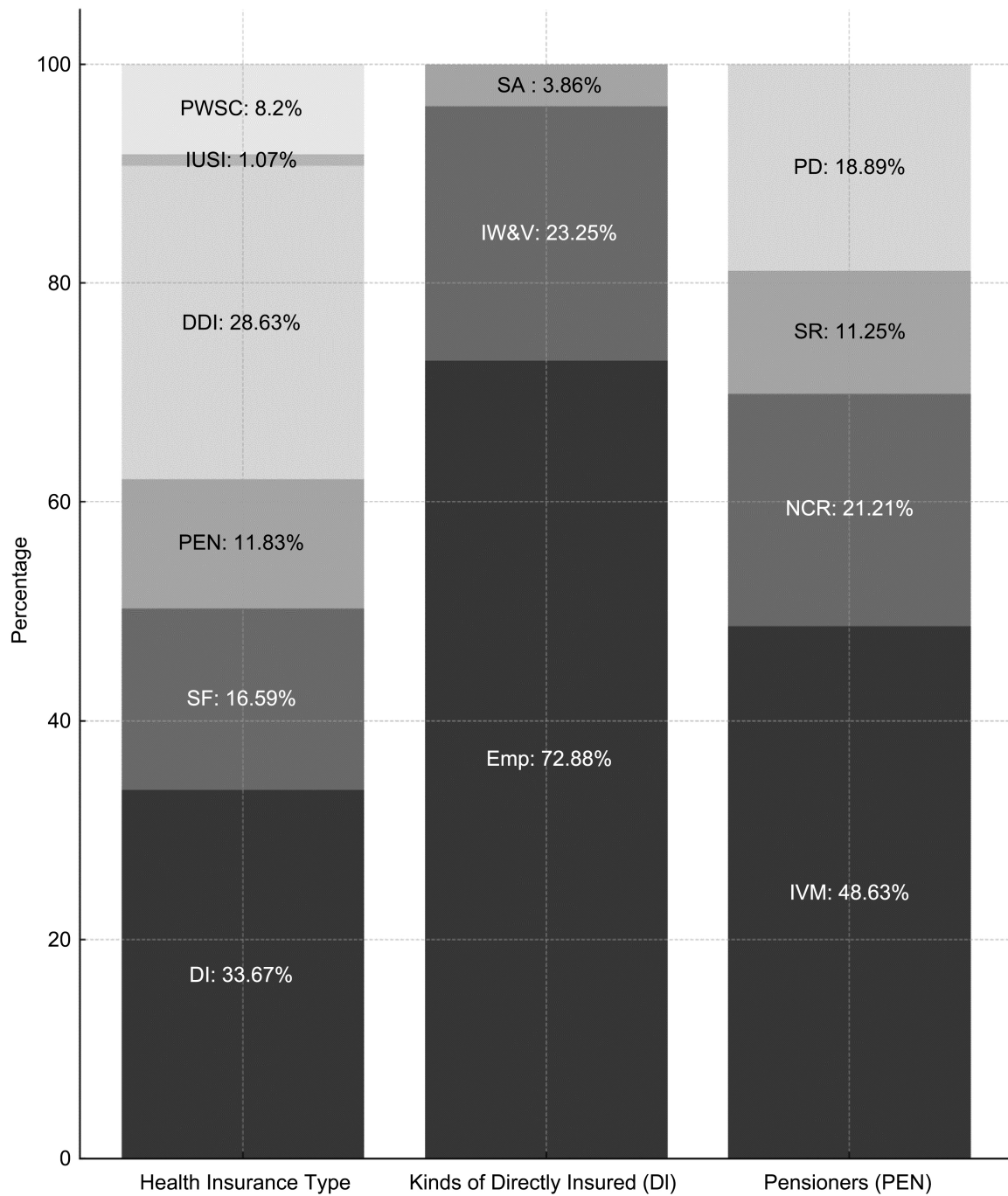


Figure 3. Types of insured individuals.

Table 1. Distribution of insurance status according to the 2020 CCSS Institutional Report.

Type of insured individual	Number of people	Percentage (%)
Directly insured (DI)	1,721,093	33.67%
1) Salaried workers	1,254,432	72.88% of DI
2) Independent and voluntary workers	400,216	23.25% of DI
3) Insured under specific agreements	66,445	3.86% of DI
State-funded (SF)	847,982	16.59%
Pensioners (PEN)	604,970	11.83%
1) Under the IVM insurance	294,250	48.63% of PEN
2) Under the RNC	128,352	21.21% of PEN
3) Under special regimes	68,083	11.25% of PEN
4) Dependents of pensioners	114,285	18.89% of PEN
Dependents of a directly insured (DDI)	1,463,630	28.63%
Insured under student insurance (IUSI)	54,595	1.07%
Population with special conditions (PWSC)	419,135	8.20%
1) Uninsured	412,561	8.07%
2) With private insurance	6574	0.13%

5. Financing of the CCSS

Article 22 of the Constitution establishes a mandatory tripartite contribution (worker, employer, and government) to fund the CCSS. These contributions vary depending on the type of worker and aim to ensure the sustainability of the social security system in the country [3] [12]. These contributions collectively form the total funding of the CCSS, which amounts annually to about one billion dollars or 12.9% of the Gross Domestic Product of the country according to the Central Bank [12]. The contribution details for each sector are as follows:

Funding Structure of the CCSS (Table 2)

1) Salaried Sector: Workers contribute 10.67% of their gross salary and employers contribute an amount equal to 26.67% of the workers' salary. The salaried sector makes the largest contribution to the CCSS.

2) Pensioners' Sector: Pensioners contribute 5% of the total amount of their pensions; the Pension Fund contributes an amount equal to 8.75% of the total pensions paid; and the government contributes an amount equal to 0.25% of the total amount of pension paid.

3) Voluntary Sector: This sector enables individuals who are not covered through a government route and want to access CCSS health services to make voluntary contributions. Individuals making voluntary contributions only receive access to

covered medical care; they do not receive other CCSS benefits like pensions. The amount of the voluntary contribution is calculated based on individuals' incomes; if there is a difference between the insured's contribution and the amount necessary to fund medication and care services, the government funds the difference. The government also contributes an amount equal to 0.25% of the amount paid by this group.

4) Independent Sector: This sector enables contributing individuals, unlike those in the voluntary sector, to obtain additional benefits such as pensions, economic advantages, and more. Independent workers pay a contribution based on a scale approved by the CCSS Board of Directors. Additionally, the government contributes an amount equal to 0.25% of this group's contribution base.

Table 2. Distribution of contributions to CCSS financing system.

	Category	(%)	(%)
Employed sector:			
Workers:	TOTAL contribution	10.67	100
1	Health insurance	5.50	51.5
2	Pension insurance (IVM)	4.17	39.1
3	Banco popular	1	9.4
Employers:	TOTAL contribution	26.67	100
1	Health insurance	9.25	34.7
2	Pension insurance (IVM)	5.42	20.4
3	FODESAF	5	18.7
4	Labor capitalization fund	1.5	5.6
5	National training institute	1.5	5.6
6	Complementary INS pension	1	3.7
7	Supplementary pension fund	2	7.5
8	IMAS	0.5	1.9
9	Banco popular	0.5	1.9
State subsidies:	TOTAL contribution	1.49	100
1	Health insurance	0.25	16.8
2	Pension insurance (IVM)	1.24	83.2
Pensioner sector:		14	100
1	Pensioners	5	35.6
2	Pension fund	8.75	62.2
3	State	0.25	17.2

Continued

Voluntary sector:		
1	The contribution is determined by the applicant's income	*
2	State	0.25
Independent sector:		
1	Contribution is determined by a scale approved by the Board of Directors	*
2	State	0.25

*Percentage of contribution vary by profession or employ.

6. Organization of the CCSS [11]

CCSS' services are provided through administrative levels (central, regional, and local) and level of care (primary, secondary, tertiary). **Figure 4** provides an overview of CCSS' services.

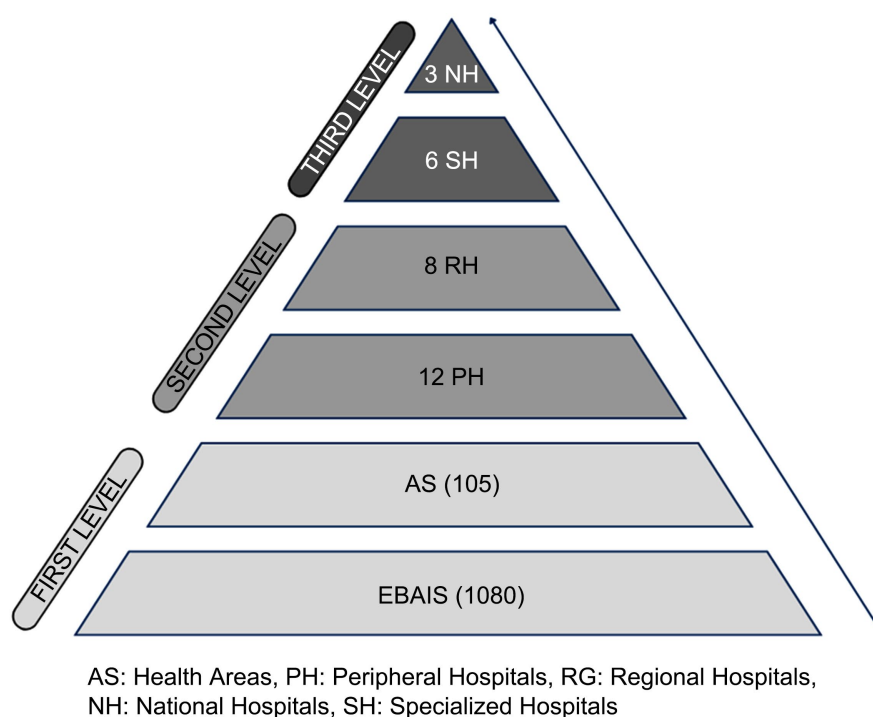


Figure 4. Local level organization.

Administrative Levels: The General Health Regulation, specified in Article 17 of the 1989 Executive Decree, establishes the administrative levels of the SNS.

Central Level

At the central level, the CCSS is governed by a Board of Directors, which is presided over by the Executive Presidency. There are representatives from each sector: two from the government, three from the employers, and three from the

workers. The Board of Directors is responsible for establishing policies for the operation, improvement, and modernization of the Social Security Fund. It also supervises and monitors the Fund's administration, deliberates and makes decisions in accordance with the law and regulations, and ensures that the Fund operates in a safe, continuous, efficient, profitable, and transparent manner. There are seven management areas: General Management, which acts as the highest administrative authority of the institution; Administrative Management; Medical Management; Financial Management; Infrastructure and Technology Management; Logistics Management; and Pension Management.

The central level is responsible for the centralized digital medical record System [1] [4] [13].

The Centralized Digital Record System (Expediente Digital Único en Salud, or EDUS) was implemented by the CCSS in 2015 following a Supreme Court of Justice Order in May 2012. Patient information is stored centrally in EDUS, which enables access to medical and social security records from a single source for all levels of healthcare provision. EDUS demonstrates the CCSS's commitment to leveraging technology to improve healthcare efficiency and patient care in Costa Rica. The EDUS management team includes people with expertise in medicine, nursing, and laboratory sciences as well as engineering, statistics, and project management. The main purpose of EDUS is to provide efficient, high-quality, and reliable support for the healthcare services of the CCSS. In addition to the integrated medical records, EDUS also provides systems for scheduling and appointments, hospital admissions and discharges, laboratory information (e.g., pathology, cytology), vaccination, pharmacy and epidemiological surveillance. EDUS also provides information on compulsory pensions and automatically generates digital death certificates. However, EDUS does not have information on healthcare utilization within the private sector [14].

Regional Level [15]

Costa Rica is divided into seven health regions (Figure 5). In each region, the Directorate of the Integrated Network is tasked with adopting and systematizing the strategies, plans, programs, and budgets established by the central level within its geographic area of influence. Furthermore, it is responsible for coordinating, supervising, and training local human resources, as well as managing the physical and financial resources allocated to the region.

Local Level

This level is responsible for planning, executing, and monitoring health actions through which the plans and programs defined by the central level and systematized by the regional level are operationalized. Additionally, local projects are formulated and implemented to address the specific needs of the area of influence, and the human, physical, and financial resources allocated to this level are managed.

Local level health services, encompassing facilities for health promotion, disease prevention, treatment, and rehabilitation, are distributed as follows: (Figure 5 and Supplementary Figure 1).

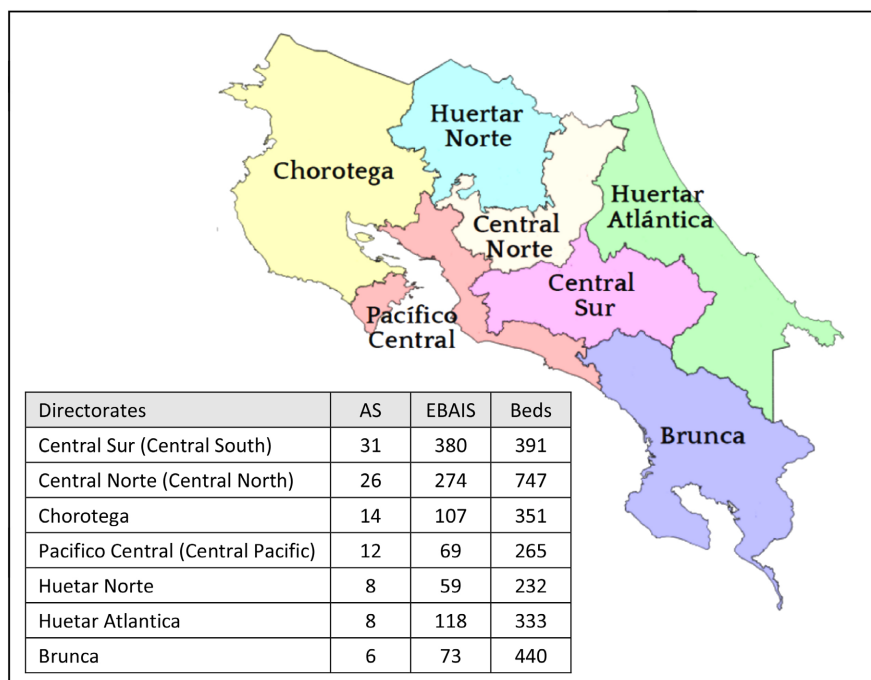


Figure 5. Regional health service directorates.

- EBAIS: The 1080 EBAIS units administer care for minor health problems in Health Areas and hospitals serving a population of between 5000 and 10,000 inhabitants.
- AS: The 105 AS units comprise a set of EBAIS working in coordination with a hospital in a geographical region. AS units provide coverage for between 5000 and 50,000 registered inhabitants, depending on the professional services available.
- Peripheral Hospitals: There are twelve Peripheral Hospitals. They support primary and secondary levels of care (as defined below under Levels of Care) and include diagnostic services and some medical specialties (obstetrics and gynecology, pediatrics, and general medicine).
- Regional Hospitals: There are eight Regional hospitals. These hospitals provide a greater number of medical specialties (internal medicine, surgery, obstetrics and gynecology, and pediatrics) than Peripheral Hospitals. Some regional hospitals include subspecialties to meet the demand of the region.
- General National Hospitals: There are three General National Hospitals. They are the main establishments for specialized medical care. These hospitals also serve as centers for teaching, training, and medical research. They have the necessary infrastructure to offer high-level services and handle cases that other establishments cannot adequately manage.
- Specialized National Hospitals: There are six Specialist National Hospitals, and they offer high-complexity care and support training, capacity building, and research. They provide services at the national level and receive patients from other hospitals when necessary.

Levels of Care: Article 18 of the Health Regulation establishes three levels of care in networks for health establishments [14] [16]:

Primary Level of Care

Primary care includes services relating to health promotion, disease prevention, medical treatment, and rehabilitation of least complexity. These services are carried out by the members of the EBAIS units. Outpatient consultations, including general medicine in clinics, health centers, and health posts, as well as in community consulting rooms, homes, schools, and workplaces are handled at the Primary level. As of 2017, the Primary level had 11,343 workers.

Currently, the CCSS has 1080 EBAIS units nationwide, of which 532 are EBAIS headquarters and 548 are periodic visit posts (Mobile trucks equipped with services that periodically visit the most remote communities). Each EBAIS covers an average of 4,584 inhabitants, and includes a general practitioner, a nursing assistant, and a primary health care technical assistant.

As noted above, each EBAIS is part of an AS unit. The AS units are led by an area director and a support team. Each EBAIS includes at least one member of the following professions: community family doctor, dentist, pharmacist, microbiologist, nurse, social worker, and nutritionist. AS units also have workers who carry out human resource and other administrative tasks. The average population coverage of each AS is 49,172 inhabitants.

Primary care includes comprehensive child, adolescent, adult (including woman's) and elder care. Services are offered in outpatient consultations, home visits, schools, workplaces, and recreation centers. Additionally, EBAIS units promote and participate in health promotion projects aimed at improving the living conditions of the population. To do this, they coordinate with different stakeholders in their sectors and health areas. Stakeholders include persons from public and private sectors and organized community groups.

Second Level of Care (Secondary Level)

The secondary level of care offers outpatient and hospital interventions in medical specialties and certain subspecialties: internal medicine, pediatrics, obstetrics and gynecology, psychiatry, general surgery, neonatology, otolaryngology, orthopedics, cardiology, dermatology, and ophthalmology. Second-level institutions have operating rooms equipped for less complex major surgeries. As of 2017, these institutions had 20,943 workers.

Secondary care is available at three classes of facilities. Major clinics/complex AS units primarily provide outpatient services and have minimal inpatient capacity. Most clinics have no beds. Peripheral Hospitals offer higher care levels than major clinics and have moderate bed capacity. For example, Hospital Los Chiles has 35 beds, and Hospital Guápiles has 137 beds. Regional Hospitals provide comprehensive and specialized care and have significant bed capacity. Hospital San Rafael has the highest capacity, with 290 beds.

Third Level of Care (Tertiary Level)

The third level of healthcare includes specialized hospitals and national hospi-

tals, and provides outpatient and hospital services that are more complex than those of the second level. This includes care in all medical subspecialties, such as allergy, urology, peripheral vascular surgery, hematology, oncology, nephrology, infectious diseases, neurology, and physical medicine and rehabilitation. Additionally, this level offers support, diagnostic, and therapeutic services that demand advanced technology and specialization. As of 2017, these institutions had 16,001 workers.

There are three general national hospitals and six specialized hospitals; the specialized hospitals are all located in San Jose (Costa Rica's capital) and receive patients from the first and second levels (**Supplementary Table 1** and **Supplementary Table 2**). The third level has 2687 hospital beds available for patient care.

The patient referral flow progresses from the least complex level (primary) to the secondary level, and finally to the most complex level (third level), in that order of complexity according to the pathology (see **Supplementary Figure 1**).

7. Discussion

According to the Organization for Economic Co-operation and Development (OECD) and the World Bank, for 2020, Costa Rica's rate of 1.1 hospital beds per 1000 inhabitants indicates it is an intermediate position compared to other Central American countries. Although Costa Rica's rate is greater than some of its close neighbors, such as Guatemala (0.4 beds), Honduras (0.6 beds), and Belize (1.0 beds), it lags behind Panama (2.3 beds) and El Salvador (1.2 beds). In a broader context, the Costa Rican rate is lower than that of the United States (2.9 beds), Canada (2.5 beds), Argentina (5.0 beds), Colombia (1.7 beds), Chile (2.1 beds), and Puerto Rico (3.3 beds), although it surpasses Mexico's rate (1.0 beds). These data highlight the need to invest in health care infrastructure and resources to strengthen the system so that adequate care for the Costa Rican population in the future will be possible [14] [16].

According to World Bank data for 2020 [17], the availability of doctors per thousand inhabitants shows that Costa Rica is in a relatively strong position globally, with 3.3 doctors per 1,000 inhabitants. In the context of the Americas, Costa Rica surpasses several countries with regard to this metric, including El Salvador (2.9 doctors), the United States (2.6 doctors), Canada (2.4 doctors), Mexico (2.4 doctors), Panama (1.6 doctors), Guatemala (1.2 doctors), Belize (1.1 doctors), and Honduras (0.5 doctors). These data reflect the country's commitment to medical care and the training of health professionals to meet the needs of its population.

The data provided by the OECD show that Costa Rica has a higher Gross Domestic Product (GDP) per capita compared to other Central American countries: \$24,777 per inhabitant in 2022. Regarding health expenditure, Costa Rica allocated an average of \$1658 per inhabitant in 2022. Of this expenditure, the government contributed about 75% percent of that figure, while patients contributed the remainder. The total health expenditure represented 6.69% of the country's GDP.

As to be expected, there are significant differences in these metrics between

Costa Rica and the United States. The United States has a much higher GDP per capita, reaching \$76,360 per inhabitant in 2022. The average health expenditure per person in the United States was \$12,555, with a government contribution 85% and patients contributing the rest. Total health expenditure in the United States represented 16.44% of its GDP. Clearly, there are notable differences in how medical care is financed and provided in the two countries.

Compared to Argentina, a country with a GDP per capita similar to that of Costa Rica (\$23,650 in 2022), annual health expenditure was \$2385 per inhabitant, with a government contribution of 78%. The total health expenditure in Argentina represented 10% of its GDP. Values for Chile, which also has a similar GDP per capita to Costa Rica (\$29,866 in 2022) are similar to those of Argentina: annual health expenditure was \$2699 per inhabitant, with a government contribution of 62.2% and total health expenditure representing 9.03% of GDP. For both of these countries, the proportion of GDP attributable to health expenditures is greater than that for Costa Rica.

In comparing health care expenditures among countries, it is critical to also consider differences in the quality of care delivered. The Medical Care Index [18] is a tool that evaluates country-specific quality of the healthcare system through various indicators including health infrastructure, competence of health professionals, per capita cost, availability of quality medicines, government preparedness, environmental factors, and public health policies. Costa Rica ranks 47th out of 110 countries evaluated using this index. More highly ranked countries in the Americas are Canada (4th place), the United States (15th), Brazil (38th), and Mexico (45th) and from Central America the closest is Panama (62nd)

The Strategy and Action Plan on Health Promotion, part of the Pan American Health Organization's Sustainable Development Goals 2019-2030 [19] focuses on strengthening health systems and services by incorporating a health promotion approach. Based on the Astana Declaration of 2018, health promotion and primary care are complementary strategies for strengthening health systems and achieving equitable access [18] [19] Given this perspective, strengthening primary care is critical to the future of the SNS. It requires improved community-level health education and promotion as well as a greater understanding of the social determinants of health and how they impact health. Furthermore, health promotion can help to sustain the solvency of the SNS through healthier aging and reduction of chronic disease and related healthcare costs.

8. Conclusions

The Costa Rican Health System includes multiple levels that addresses the health needs of its population across three levels of care, ranging from EBAS, AS, Peripheral Hospitals, Regional Hospitals, National Hospitals, to Specialized Hospitals.

The financial viability of the system is a central concern, as the CCSS must ensure the availability of resources for the payment of pensions in the future. To achieve

this, adjustments in contribution rates, retirement age, and other aspects of the system are necessary. The aging of the population, resulting from increasing life expectancy and the reduction of the birth rate, puts pressure on the pension system by increasing the proportion of elderly people and decreasing the proportion of working-age people in the general population.

As noted in the OECD's Health System Studies (2017), the Costa Rican health system is commendable for its institutional stability regarding financing and planning. The system is characterized by strong primary care, a high degree of intersectoral coordination, and effective dialogue between users and administrators, as well as the implementation of EDUS [14] [20]. However, it is crucial for the system to adapt to the emerging needs of the population and to possess the necessary professional and technological resources to respond to current challenges. To accomplish this, it will be necessary to evaluate process and outcomes at differing administrative levels and levels of care and collect key information for organizational decision-making goals such as improving service wait times.

The financing of the Costa Rican health system takes into account the potential impacts of the served population's demographic distribution on the system's sustainability. There is also a need to address inequalities in healthcare access based on geographic location. Costa Ricans in rural or remote areas often face challenges in accessing medical care compared to those in urban areas. Urban zones typically have better infrastructure, including hospitals and health centers, while rural areas may have limited medical services, forcing residents to travel long distances for healthcare.

The focus on remote and socioeconomically disadvantaged regions, along with the implementation of EBAIS units to serve these populations, has positively impacted medical access and reduced disparities. The Costa Rican government's efforts to improve healthcare access in rural areas by expanding health infrastructure, training health professionals, and promoting community health programs are commendable. Nonetheless, inequality in healthcare access remains a significant challenge in the country.

The Costa Rican Health System is robust and dynamic. Nevertheless, the immediate and long-term health needs of its population need to be addressed, and continuous improvements and strategic adaptations are essential. These include enhancing healthcare access in rural and remote areas, optimizing resource allocation, and embracing technological advancements to maintain high-quality, equitable healthcare services for all citizens.

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Disclosure

The content is solely the responsibility of the authors and does not necessarily

represent the official views of the National Cancer Institute.

Disclaimer

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] Asamblea Legislativa de la República de Costa Rica. (N.º 5395). Ley General de Salud. <https://costarica.eregulations.org/media/L-5395.pdf>
- [2] de Salud, M. (1989) Reglamento General del Sistema Nacional de Salud (Decreto Ejecutivo N.º 19276-S). La Gaceta, 230. <https://www.binasss.sa.cr/opac-ms/media/digitales/Sistema%20Nacional%20Salud,%20reglamento%20general.pdf>
- [3] Asamblea Legislativa de la República de Costa Rica (1949) Constitución Política de la República de Costa Rica. <https://www.tse.go.cr/pdf/normativa/constitucion.pdf>
- [4] Asamblea Legislativa de la República de Costa Rica (1982) Ley de Riesgos del Trabajo (Ley N.º 6727). Costa Rica. https://www.cso.go.cr/legislacion/leyes/ley_n_6727_reforma_del_titulo_IV_del_codigo_de_trabajo.pdf
- [5] Asamblea Legislativa de la República de Costa Rica (1993) Ley de Tránsito (Ley N.º 7331). Costa Rica. <https://www.ucr.ac.cr/medios/documentos/2015/LEY-7331.pdf>
- [6] Asamblea Legislativa de la República de Costa Rica (1943) Ley Constitutiva de la Caja Costarricense de Seguro Social (Ley N.º 17). Costa Rica. https://www.binasss.sa.cr/revistas/rjss/juridica1/Ley%20const_%20vigente%20anotada.html
- [7] Área Análisis y Proyección de Servicios de Salud (2021) Publicación del Área Análisis y Proyección de Servicios de Salud. Caja Costarricense de Seguro Social, Gerencia Médica, San José, Costa Rica. <https://www.studocu.com/latam/document/universidad-autonoma-de-santo-domingo/salud-y-sociedad-ii/organizacion-y-establecimientos-de-salud-de-la-ccss-al-31-12-2021/46150977>
- [8] Sáenz, M.R., Acosta, M., Muiser, J. and Bermúdez, J.L. (2011) Sistema de salud de Costa Rica. *Salud Pública de México*, **53**, S156-S167. https://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S0036-36342011000800011
- [9] Caja Costarricense de Seguro Social (2022) Seguro de Enfermedad y Maternidad (SEM), Régimen de Invalidez, Vejez y Muerte (IVM), Plan Anual Institucional. Presidencia Ejecutiva, Dirección de Planificación Institucional. Informe de Evaluación 2022. <https://aissfa.ccss.sa.cr/documentos/financieros/index.html>
- [10] Robles Cordero, E. (2019) El sistema de pensiones en Costa Rica y sus desafíos. <https://www.academiaca.or.cr/wp-content/uploads/2020/03/El-sistema-de-pensiones-en-Costa-Rica-y-sus-desaf%C3%ADos.pdf>
- [11] Caja Costarricense de Seguro Social, Gerencia Médica, Dirección Proyección de

- Servicios de Salud, Área Análisis y Proyección de Servicios de Salud (2022) Memoria de áreas de salud, sectores EBAIS, sedes de área, sedes de EBAIS, y puestos de visita periódica en el ámbito nacional al 31 de diciembre de 2021.
- [12] (2024) Consideraciones finales sobre el Proyecto de Ley de Presupuesto 2025. <https://sites.google.com/cgr.go.cr/monitoreocgr/2025/it-2025/dfoe-fip-mtr-00052-2024>
- [13] Dirección Planificación Institucional (2023) Informe de Formulación Plan Presupuesto Institucional 2023 (Versión Enero 2023). Caja Costarricense de Seguro Social. <https://sites.google.com/cgr.go.cr/monitoreocgr/2025/it-2025/dfoe-fip-mtr-00052-2024>
- [14] Ochoa Chaves, L., Jiménez Alvarado, O.M. and Martínez de Lemos, F. (2023) Costa Rica's Unified Digital Health Record (EDUS) System: Best Practices, History, and Implementation. Inter-American Development Bank. <https://creativecommons.org/licenses/by/3.0/igo/legalcode>
- [15] Caja Costarricense de Seguro Social, Centro de Desarrollo Estratégico e Información en Salud y Seguridad Social (CENDEISS), Proyecto Fortalecimiento y Modernización del Sector Salud, Universidad de Costa Rica, Vicerrectoría de Acción Social, Facultad de Medicina, Escuela de Salud Pública (2004) Curso de Gestión Local de Salud para Técnicos del Primer Nivel de Atención: Primera Unidad Modular-El Sistema Nacional de Salud en Costa Rica: Generalidades.
- [16] Organization for Economic Co-Operation and Development (OECD) (2024) Hospital Beds. <https://www.oecd.org/espanol/estadisticas/camas-de-hospital.htm>
- [17] IndexMundi (2024) Costa Rica Health Profile 2022. <https://www.indexmundi.com/g/r.aspx?t=0&v=2227&l=es>
- [18] CEO World Magazine (2023) Countries with the Best Health Care Systems 2023. <https://ceoworld.biz/2023/08/25/revealed-countries-with-the-best-health-care-systems-2023/>
- [19] The World Bank (2024) Physicians (Per 1000 People). https://datos.bancomundial.org/indicador/SH.MED.PHYS.ZS?most_recent_value_desc=true
- [20] ECLAC and OPS (2024) La urgencia de invertir en los sistemas de salud de América Latina y el Caribe para reducir la desigualdad y alcanzar los Objetivos de Desarrollo Sostenible. <https://www.paho.org/en/documents/urgency-investing-health-systems-latin-america-and-caribbean-reduce-inequality-and-achieve-the-sustainable-development-goalsd>

Supplementary

Supplementary Table 1. Second level of care classification by complexity.

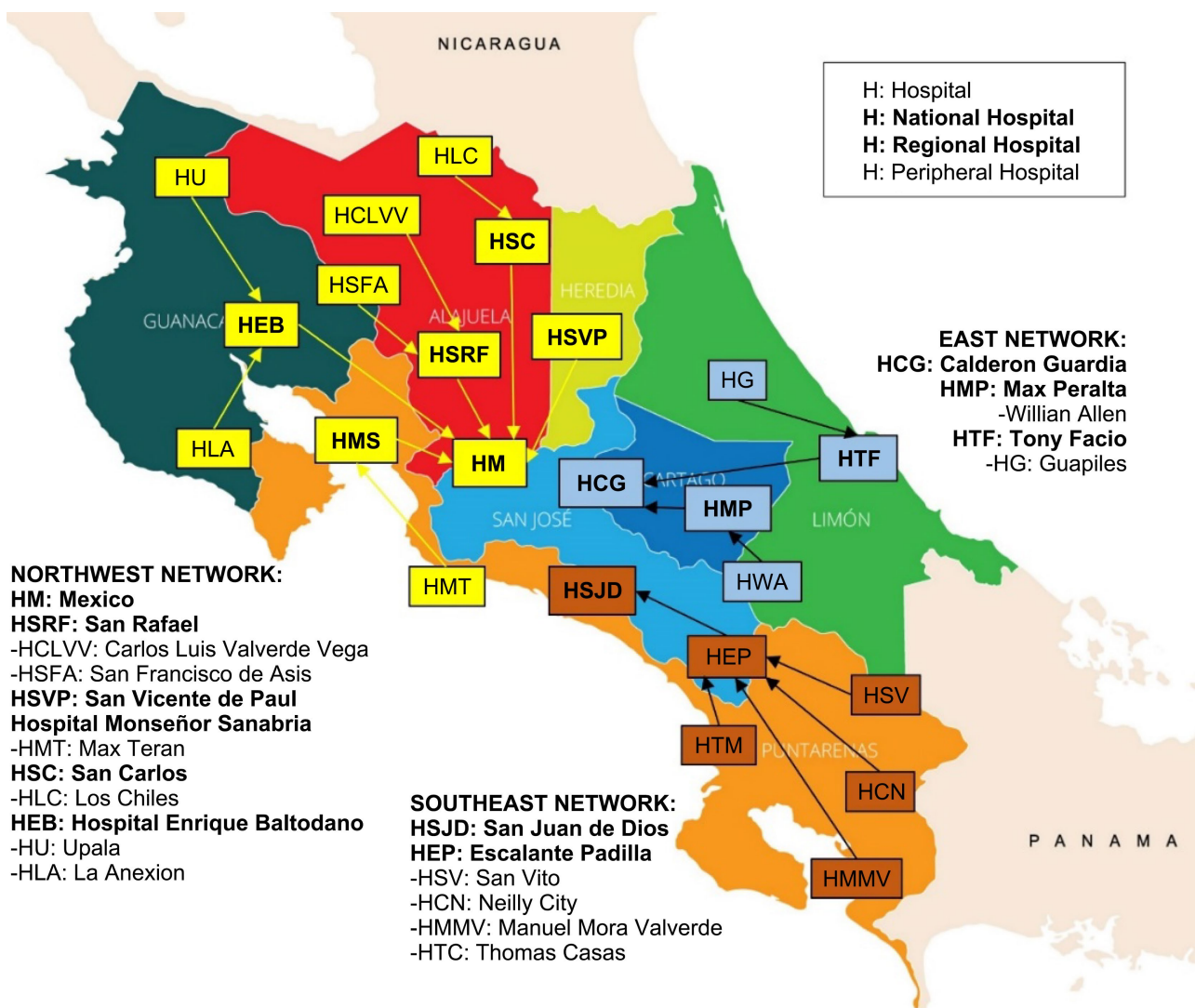
Type	Name	Region	Beds
Major Clinics or Complex AS	AS Tibás-Merced-Uruca (Clorito Picado Clinic)	Central North	No beds
	AS de Coronado	Central South	No beds
	AS Dr. Solón Núñez Frutos in Hatillo	Central South	No beds
	AS Dr. Marcial Fallas in Desamparados	Central South	42 beds
	AS de Puriscal Turrubares	Central South	No beds
	AS de Cañas	Chorotega	No beds
	AS de Siquirres	Huetar Atlántica	12 beds
Peripheral Hospitals	Hospital Los Chiles	Huetar Norte	35 beds
	Hospital Max Terán Valls	Central Pacific	55 beds
	Hospital La Anexión	Chorotega	131 beds
	Hospital de Upala	Chorotega	28 beds
	Hospital Guápiles	Huetar Atlántica	137 beds
	Hospital of the city of Neilly	Brunca	76 beds
	Hospital San Vito	Brunca	33 beds
	Hospital Manuel Mora Valverde	Brunca	59 beds
	Hospital Tomás Casas Casajús	Brunca	50 beds
	Hospital Carlos Luis Valverde Vega	Central North	100 beds
	Hospital San Francisco de Asís	Central North	86 beds
Hospital William Allen Taylor	Central South	98 beds	
Regional Hospitals	Hospital Max Peralta Jiménez	Central South	251 beds
	Hospital San Carlos	Huetar Norte	197 beds
	Hospital Tony Facio Castro	Huetar Atlántica	184 beds
	Hospital Monseñor Sanabria Martínez	Central Pacific	210 beds
	Hospital Fernando Escalante Pradilla	Central South	222 beds
	Hospital San Rafael	Central North	290 beds
	Hospital Enrique Baltodano Briceño	Chorotega	192 beds
Hospital San Vicente de Paul	Central North	271 beds	

Supplementary Table 2. Composition of the third level and region of coverage.

Category	Hospital Name	Specialization	Region	Beds
General National Hospitals	Calderón Guardia Hospital	General	Central South, Huetar Atlántica	415
	México Hospital	General	Central South, Central North, Huetar Norte, Chorotega, Central Pacific	416
	San Juan de Dios Hospital	General	Central South, Brunca	610

Continued

Specialized Hospitals	Carlos Sáenz Herrera Hospital	Pediatrics	Central	259
	Raúl Blanco Cervantes Hospital	Geriatrics and Gerontology	Central	139
	Adolfo Carit Eva Hospital	Comprehensive Women's Care	Central	108
	Humberto Araya Rojas National Rehabilitation Center	Rehabilitation	Central	72
	Roberto Chacón Paut Hospital	Long-term Chronic Psychiatric Diseases	Central	173
	Manuel Antonio Chapui Hospital	Psychiatric Conditions	Central	495
Total Beds, General National and Specialized Hospitals				2687



Supplementary Figure 1. Flow of referrals received by each national hospital.