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ACCESS TO HEALTH SYSTEMS IN HIGHLY DISPERSED AREAS IN COLOMBIA

ACCESO A LOS SISTEMAS DE SALUD EN ZONAS ALTAMENTE DISPERSAS EN COLOMBIA

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ABSTRACT

The following article aims to correlate how dispersion influences access to health services in a locality or region. According to a research process conducted in the eastern Vichada region of the Colombian plain, bordering neighboring Venezuela and with a quality that sets it apart from the rest of the Colombian regions, within its political and administrative component, it has the municipality with the largest land area in the country, thus generating marked limitations for inhabitants' access to frontline health services or Primary Health Care (PHC). The municipality of Cumaribo-Vichada is one of the largest in the country, with a high rurality and dispersion of over 65,000 km2, making it a significant challenge when planning health services in the region. With a highly rural and exponentially growing population, planning for timely and quality access to health services in the department of Vichada is complex. It is a challenge for the health system to plan appropriately in highly dispersed areas and select strategies to improve precarious access to services, while also working with the Colombian government to increase access through governance in local health systems.

Palabras clave:
atención primaria en salud, red de servicios, modelo de atención y acceso.

RESUMEN

El siguiente artículo tiene como finalidad hacer una correlación de cómo influye la dispersión en el acceso a los servicios de salud en una localidad o una región. De acuerdo a un proceso investigativo que se dio en la región del vichada, oriente de la llanura colombiana, limítrofe con el vecino país de Venezuela y teniendo una cualidad que la hace diferente al resto de las regiones del país colombiano, posee dentro de su componente político-administrativo el municipio con mayor extensión de tierra del país, de esta manera generando unas limitantes marcadas para que los habitantes accedan a los servicios de salud de primera línea de frente o de Atención primaria en salud (APS). Siendo el municipio de Cumaribo-Vichada de los más extensos del país con alta ruralidad y dispersión con más 65.000 km2, convirtiéndolo en un total reto al planear los servicios de salud en la región. Con una población altamente rural y en crecimiento exponencial hacen que

	en el departamento del vichada sea complejo la planificación del acceso oportuno y con calidad en los servicios de salud, siendo todo un reto para el sistema de salud que en zonas altamente dispersas se planifique de manera correcta y se escoja una estrategias para mejorar el precario acceso de los servicios, articulando de igual manera con el estado colombiano para aumentar el acceso desde la gobernanza en los sistemas de salud locales.

Introduction

The research conducted by the research team in the Department of Vichada in eastern Colombia, based on the quality attributes that must be in place for a network of health services in a geographical context such as the one presented in the Department and its municipalities to have the solvency to provide services at the time that the population in their episodes of illness, which are characteristic of the analysis of the health situation of the population of Vichada distributed in their municipalities respectively.

Based on some research Alba et al. (2016), as well as in instruments to measure access, efficiency, timeliness and inclusion in the health care received by the population of Vichada in its different health service providers, it was possible to establish some health determinants that affect morbidity and mortality in the different municipalities of the department of Vichada. Using a geographic orientation of the current service provision network, it was necessary to determine the clusters in rural areas in order to locate the closest points of care that could be found when consulting health services in the Department; likewise, an arithmetic calculation was made relating the consultations by atareo group that would allow evaluating the service consumption of the inhabitants of Vichada for each of the municipalities that administratively make up the Department according to certified sources of information (RIPS).

The purpose of this article is to show the research conducted in the Department of Vichada regarding the access to services that the inhabitants of a territory with high rurality and dispersion may have, also taking into account the supply or availability of services that should be available in territories with these characteristics to optimize access to services and thus generate actions aimed at strengthening primary health care (PHC), thus in a quantitative research (descriptive cross-sectional), which allowed defining the installed capacity in a region with areas of high rurality and dispersion by the research.

Authors such as Escalona and Diez (2004) indicate that health services are directly related to whether they are basic or specialized according to the level of rurality and dispersion, which is a starting point when analyzing the network of services in areas with dispersion characteristics. The research leads us to make pressures on the capacity of a health system to provide services depending on the geographical location of the user, especially in a country like Colombia where the heterogeneity of the territory implies a planning based on geography.

Scale Back, or concentration of the network of services, is directly related to the location of the provision of services according to the market (supply vs. demand), which makes it possible to reduce the cost of the health care transaction, which in highly dispersed areas generates a market asymmetry or an imperfect relationship that affects the planning of services and the execution of primary health care activities (Escalona and Diez, 2004).

Social inequalities and health effects in any population occur when health systems do not identify the factors that generate harm in the protection of the health of the users of a system; these violations are not only related to health care as such, but also to the provision of services or the inability of services to reach where they are needed (Juárez et al. 2014).

The research to determine the installed capacity and access to health services in the department of Vichada is based on the determinants that can be evidenced and measured.

In the research conducted by Molina et al. (2006), in which he states that the non-utilization of health services is a product of the lack of accessibility of health services due to economic, cultural or geographic reasons. With this theory, the research conducted in Vichada, being a department where the geographical extension of the territory is conducive to the low medical attention that can be obtained in both private and public health centers authorized to provide health services, taking into account that the complexity of the network in the Department does not exceed the medium complexity centralized only in the public network, it is a matter of concern that the low access to health services is linked to the dispersion and rurality, in addition to the lack of having a comprehensive care model that is articulated with a network of services that can be strategically located so that the population can consume them in a better way, all this articulated with a weighty variable such as having within the network factors of differential approach to allow better access by the indigenous population.

The research focused directly on quantifying and analyzing the number of Vichadans who attend the health services that are provided for both rural and urban health care, as well as the access to services by the indigenous population through services and health care programs and traditional medicine.

For Valbuena (2015), in the study conducted in the city of barranquilla indicates that one of the great weaknesses of the local health system in the Caribbean city was to improve access to health services, therefore, established that the health walking strategy. They are a group of professionals who are in charge of visiting the neighborhoods house to house, in order to detect possible health problems in the community, fulfilling the role of promotion and prevention. This strategy seeks to stimulate the demand for health services by the low-income population by collecting information about the general conditions of this population that will help to target disease promotion and prevention programs in particular communities. The articulation of these three strategies, Caminantes, Pasos and Caminos, in coordination with the hospital network.

For the Banco de la Republica (2014), in a report presented, it states that when services are not provided in a timely manner, concerns arise about the supply of health services: Is it a shortage problem? Not enough hospitals? Are they poorly distributed throughout the national territory? One element that can help to understand the situation is a balance sheet or inventory of the health service providers in the country, which will make it possible to know precisely where they are located and the quality of their activities.

The utilization of health services in highly dispersed or rural areas is directly related to the capacity of the territory to organize the supply of services; therefore, Piñeres et. al (2013) state that the utilization of services is determined by the sociodemographic variables of the population that has a health need. In this same study, some theories are proposed, such as Anderson's, which suggests the use of other variables such as: a) health care needs (from the individual point of view, as well as that of the service provider); b) predisposing factors (made up of sociodemographic variables associated with attitudes and beliefs about health and disease, such as sex, education, family composition and occupation, among others) and enabling factors associated with socioeconomic conditions, whether in the family (income, health insurance) or community (accessibility, availability).

Method

Research Design

For some researchers, such as Cassiri (2020), quantitative cross-sectional research is valuable because it makes it possible to define variables that make it possible to solve problems of value to humanity. According to the type of research, we used a descriptive cross-sectional method that allows estimating the health conditions of the people of Vichada in a determined period of time, using independent variables (care provided) and dependent variables (health centers). During the time of the research, we also measured some determinants that allow relating it to the unsatisfied demand in the department due to the lack of access to health services that are transformed into disease.

The definition of the type of research establishes what type of objectives can be achieved or at least what paradigms can be broken, for this purpose Hernández et al. (2014), states that; "The problem must express a relationship between two or more concepts or variables (characteristics or attributes of people, phenomena, organisms, materials, events, facts, systems, etc., that can be measured with numerical scores" (pp. 69). With this, the research made it possible to correlate the phenomena observed in the territory in relation to the non-provision of services and to use variables specific to the provision of services in order to achieve the objectives that were presented at the end of the research.

Methodological design

To establish the types of sources that were used in the research to collect the data, they were divided as follows;

Primary sources. The primary source of the research has several components as main data: The surveys that allowed us to collect information from the field would give us the ability to analyze the determinants that affect the population of Vichada's lack of access to health services. The RIPS that were processed to visualize the amount of services consumed in Vichada in a given period of time, allowing for access analysis. The information collected from the Ministry of Health's REPS website allowed us to analyze and quantify the network of services in the municipalities and specifically in the Department.

Secondary sources. The secondary sources were bibliographic references that allowed us to visualize how a health care model should be built based on the specific needs of the population. We were able to take as references different articles, guides from the Ministry of Health and international references from a Central American country (Guatemala) as well as the WHO.

Based on the number of inhabitants according to the DANE 2020 projection, we can identify that the statistical study for the selection of the population is probabilistic with simple random sampling, where we seek to obtain a defined population that will allow us to carry out the statistical intervention by being surveyed by a part of the research. Direct interviews will be conducted by support personnel for the research team, most of whom are indigenous personnel, in order to achieve optimal performance in data collection.

Population and Sample

Bearing in mind the type of research chosen by the work team, survey-type tools were defined to capture and evaluate aspects such as: accessibility, requests made, final product of care, advice from the medical team, economic aspects, among others. Taking into account the sampling technique according to Hernández et al. (2014), a random

selection was made of the population to be intervened where the confidence level had 95% to reduce biases within the research where at the level of the Department 383 surveys were distributed to collect the information, the research team took into account the number of inhabitants to distribute the surveys being Cumaribo the municipality where the largest number of surveys (60%) should be applied because it is the largest and most populated municipality in Vichada.

Also within the techniques used by the research team, direct observation with arithmetic counting of the RIPS for some variables previously defined according to the morbimortality of the Department, which was contrasted with the ASIS 2015. All the information that was processed was submitted by the providers, in the RIPS worked on, 100% of the population consulting health services in Vichada are grouped as PUBLIC-PUBLIC PROVIDER-PUBLIC NETWORK and PRIVATE-PRIME PROVIDERS-indigenous-private network, the public network obtained the information provided by the Secretary of Health of Vichada in the area of information systems, while the indigenous network provided the information by the general direction, all this was consolidated in counting instruments designed by the research team.

Variables

The researchers defined the type of research, which is quantitative in nature, with which a reasonable answer to the problem statement will be sought, for this reason it is defined as follows;

Independent Variable: An independent variable is a variable that represents a quantity that is modified in the investigation and number of health care services that will be processed from the RIPS source (Sousa et al. 2007).

Dependent Variable: A dependent variable represents a quantity whose value depends on how the independent variable of the research is modified, which is divided into two; health centers that are enabled for care in Vichada and indigenous translators that are provided by the IPS enabled in the network of services (Sousa et al. 2007).

Research Instrument

The data processing techniques have two ways that allow access to the analysis of information, for some research the data collection techniques or instruments used in scientific research are of great variety, but quantitative research generally uses surveys, interviews, systematic observation, content analysis, checklists, among others (Hernández and Duana, 2020).

The research focused on a two-way survey-type data collection instrument: 1). The first was the application of surveys that made it possible to capture variables related to the provision of services, such as accessibility, requests and supplies, products (results) and advice (information). 2). The second component of the survey activities was: socio-demographic and economic conditions.

The second component of data collection focused on the systematic observation of the individual health service provider records (RIPS) of licensed providers who in one way or another offer services in the department of Vichada.

The first stage of the research should have clearly identified the problem, which is the main possibility to count on the success of the results to be obtained. For the study conducted, the health situation analysis ASIS of the department of Vichada 2016 was taken into account, with the aim of being able to visualize relevant data for the research as indicated by authors such as Useche et al. Al (2019), where all the most updated information concerning the integrated network or effective service provision should be compiled in order to apply all the routes or documents that could be related to the

organization of the service provision network or the installed capacity of the Department by geographically defined areas, this being a systematic data collection activity that the research used. For this purpose, the research group divided the data collection method into several phases as follows:

The mission of this first phase of the research work is to compile the greatest number of factors that can affect the variables and have an impact on the results. Taking into account the problem identification phase that would be based on the tangible reality of the Department taking ASIS-2015 and the network of enabled health services delivery (REPS) by municipalities.

After having identified the problem that will be visualized in a timely manner in the approach of the research, a geographical demarcation of the health services network will be made for each municipality of the Department (Santa Rosalía, Primavera, Puerto Carreño and Cumaribo) taking into account its nature, in addition, the municipality of Cumaribo will be taken into account, which is one of the four municipalities with the largest population (50% of the Department, mostly indigenous), with the largest geographical extension where the dispersion of the population becomes an important factor to frame the research.

The research team designed a second phase of data collection to design a geographic framework of the network in the Department in order to measure attributes such as (timeliness, accessibility and quality in the provision of services), to guide the existing health services network and redesign the one offered to the population of Vichada, if necessary. The second phase of the research would have the purpose of having a structural mapping geographically of the service units that would provide health care (intramural and extramural) that would allow for a greater presence of health services in the population clusters of the Department.

The third phase of the proposed research study is related to directly taking the voice of the user through a survey type tool that allows quantifying some variables that should be taken into account to propose the design of the network of services both intramural and extramural, the survey will be applied to the population of Vichada both the subsidized health regime, as well as the contributory regime, the exception regime and the uninsured poor population, all this allowing the study to have more information related to the network that is consulted by the ordinary citizen.

The fourth phase corresponds to the analysis of the information gathered from the survey-type tool designed for the study. The main purpose of the survey is to listen directly to the users of the existing network, which will allow the research team to compare some other factors that have been previously documented, in this phase, what is proposed is to provide the different actors with a tangible suggestion of what could be the design of the network of the Department of Vichada, both intramural and extramural, to improve the health conditions of the people of Vichada, taking into account factors of the highest relevance that will be pointed out by the research team in the results and conclusions.

Results

The general objective of the research was to determine the sufficiency and accessibility of the municipal and departmental hospital network in Vichada. In order to develop the research in an integral, efficient and pertinent manner, data collection techniques were used as mentioned above in the methods section, where in this section we will show the results obtained to validate the research.

Table 1

Authorized service providers in Vichada

Type of Provider					
Municipalities	**PRIVATE**			**PUBLICA**	
	IPS	**Independent Professional**	**Total, General Private**	**IPS**	**Total, General Public**
CUMARIBO	3	1	4	2	2
SPRING	0	2	2	1	1
PORT CARREÑO	1	10	11	1	1
SANTA ROSALIA	1	0	1	1	1
Total, General			18	**Total, General**	5

Note. Source: Special registry of health service providers (REPS years 2020).

Table 1 shows that the research, taking as a reference the REPS-registry of health providers of the Ministry of Protection and Health as of November 2019, tabulates the network of services that is authorized to provide health services in Vichada, in a total of 18 providers between IPS and independent professionals of private nature, discriminated in the following way; in Cumaribo (3 IPS) and (1 Independent Professionals) totaling 4; in the municipality of La Primavera there are (2 Independent Professionals); in Puerto Carreño which is the capital of the department we found (1 IPS) and (10 Independent Professionals); in Santa Rosalía we found (1IPS). This marks a service network made up of 23 health care providers, including IPS and independent professionals.

For the research it was also important to establish within the data analysis and systematic observation that was carried out, to be able to identify the type of provider as well as the nature of the same, given the conditions that in areas with high rurality and dispersion require a local health system and likewise the responsibility of the state to provide sufficient installed capacity to provide access, timeliness and relevance in the provision of health services, for this reason the following table is presented.

Table 2

Authorized service providers in Vichada

Locations in the Department according to their nature			
Municipality	**Private**	**Publicas**	**Total**
CUMARIBO	3	1	4
SPRING	3	1	4
PORT CARREÑO	11	1	12
SANTA ROSALIA	1	1	2
Total, General			22

Note. Source: Special registry of health service providers (REPS years 2020).

Table 2 shows that in the department of Vichada there are 22 health service providers in each municipality, both private and public. Among the IPSs referenced in the department, it should be noted that only 2 are of an indigenous nature and both are only located in the urban area of the municipality of CUMARIBO, according to the REPS as of November 2019.

For the research it was important to locate how the network was conformed being the main input to provide health services in the territory, for this reason the demographic result of the population is now shown.

Figure 1
Place of origin of the consultants to services

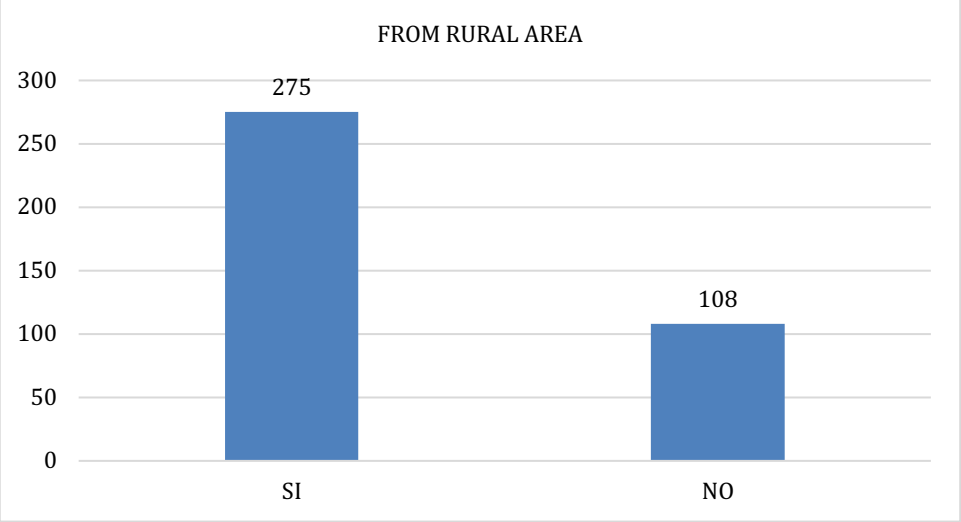

Figure 1 shows the surveys applied in the different health service providers in Vichada, where out of 383 surveys applied, 275 responses indicate that they come from rural areas, representing 71.80% of the result, and 108 responses indicate that they do not come from rural areas, equivalent to 28.19%.

Figure 2
Place of origin of the consultants to services

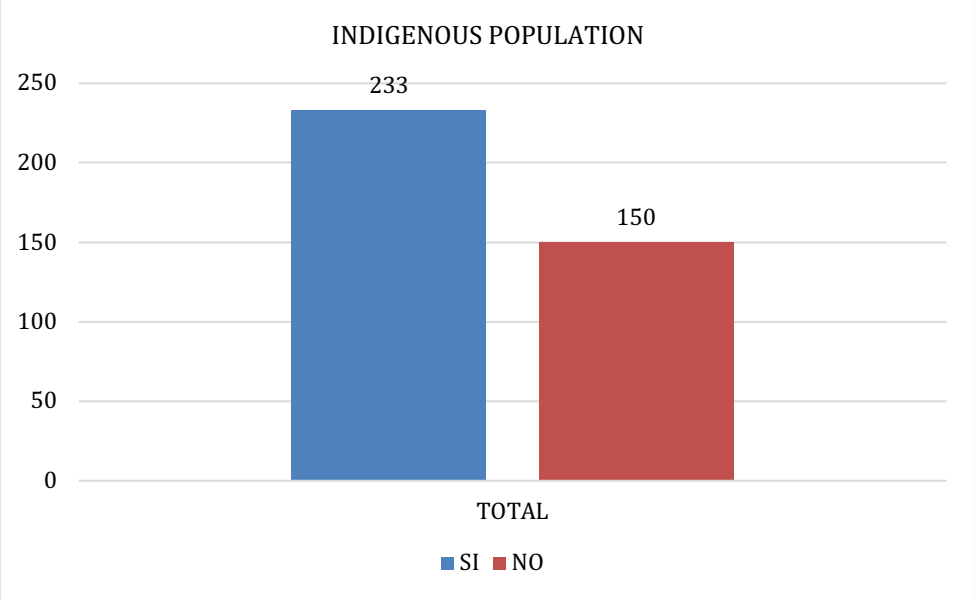

Figure 2 shows the results obtained in the survey item, where we can see that of the 383 surveys that were applied and that had the question whether they were indigenous yes or no, 233 people marked that they belonged to an indigenous group. With

this we can say that 61% of the population that consults the health services in the department of Vichada belongs to indigenous groups, being more than half of the people who consult the health services. In the same way, a total of 150 surveys of population that does not belong to the indigenous population, equivalent to 39.16% of the colonist population.

The research shows that the total indigenous population in the department of Vichada is as important as the same service delivery network that may be required to conform in an efficient manner, taking into account their ancestral beliefs in the research work it was necessary to establish how much the indigenous peoples consumed health services with Western medicine. The municipality with the highest proportion of indigenous people is CUMARIBO, which is also the municipality with the largest population in the department, with an average of 40 thousand people, 50% of whom have declared that they belong to some ethnic group in the department. In order to evaluate how many of the indigenous population consulted the health services available to them in any of the 4 municipalities, a survey was conducted to determine whether they were part of the indigenous population.

One of the main results of the research was to identify that first more than 50% of the consulting population was indigenous population, then to keep in mind that 71% of the total consulting population is from the rural area (Figure 1), with another factor that was identified was the multiculturalism that was identified as one of the most representative of the research, taking into account the existing peoples throughout the territory, which are: the GUAHIBO, the SIKUANI, the PIAROA, the PIAPOCO, the CUBEO, the PUINAVE, the AMORUA and the SALIVA are the indigenous groups present in Vichada. This generates an additional challenge, given that each indigenous people has its own ancestral characteristics, in the same way for the planning of differential health services.

Table 3

Authorized service providers in Vichada

Municipalities	Type of Transportation from the municipality to Puerto Carreño and Villavicencio	Arrival time to the main city (from the farthest community) in minutes	Distance in km to the main city from the farthest city
Puerto Carreño	Air and Ground to Villavicencio.	60 minutes to Villavicencio by air and 48 hours by land.	Carreño to Villavicencio by air 718 km
La Primavera	By land, river and air to Villavicencio. Land and river to Puerto Carreño	Primavera-Carreño by land 12 hours, by water 7 hours. Primavera-Villavicencio by air 2 hours, by water and/or land 9 hours	415 km by land from primavera to Carreño. 378 km from spring to Villavicencio by air.
Cumaribo	By air and river to Puerto Carreño and by air and land to Villavicencio. The latter only in summer.	To Puerto Carreño by air 105 minutes, by river 24 hours. By air to Villavicencio 120 minutes and by land to Villavicencio 13 hours in summer and 2 to 3 days in winter.	Cumaribo to Villavicencio 305 km by air and overland by land 481 km
Santa Rosalia	Villavicencio to Santa Rosalía, Vichada, takes approximately 8 hours and 49 minutes driving, covering a distance of 391 km	From Puerto Carreño to Santa Rosalía by air takes about 120 minutes, by river about 12 hours and by land about 14 hours	Approximately 415 km to Puerto Carreño and 200 km to Villavicencio

Note. Gobernación del Vichada (pp.59-63).

In table number 3 the investigation contextualized as a result the access to the department by where you look at it is a difficult task bearing in mind the reference that is in the table, we found that the capital Puerto Carreño is closer to Venezuela than to the nearest municipality of Meta, where access is subject to the state of the weather during the year in this way making complex mobility within the department. In the interior of the department, referencing municipalities such as Cumaribo, we see that it is almost impossible to travel by land during half of the year, the distances that a patient should assume would be more than 48 hours by land for any type of referral, now if it is a referral that exposes the patient's life the only way to be able to address the management plan.

Talking about access to Vichada is a bit complex when viewed from anywhere in the country. The current situation of the road and transportation system, both urban and rural, in the municipality of Puerto Carreño, is framed by the precarious conditions in which it is found; land transportation of both cargo and passengers is limited only to the summer season; river transportation is deficient due to the lack of continuous flows of cargo and passenger vessels that operate at all times of the year. There is currently a road from Villavicencio to Puente Arimena, passing through Puerto López and Puerto Gaitán. From Puente Arimena to Puerto Carreño, land communication is only possible during the summer season; a road has not been built to allow year-round transit, and there is only a trail marked by the tracks left by vehicles as they pass through. This road is used by trucks and truckers during four months of the year. River transportation, especially on the Meta and Orinoco rivers, is used during the winter season. Air transport is the most used means of transport for passengers and delicate and perishable cargo to and from the interior of the country, which is why the results in Table 3 are so important, as they bring us closer to the reality of highly dispersed areas.

In the municipality of La Primavera, the most important branch roads are the national highway with an approximate length of 15 km, which enters and exits at the Nueva Antioquia Inspectorate. It has a ferry that provides service in Puerto Esperanza and Casanare.

Figure 3

Type of insurance of the population consulted

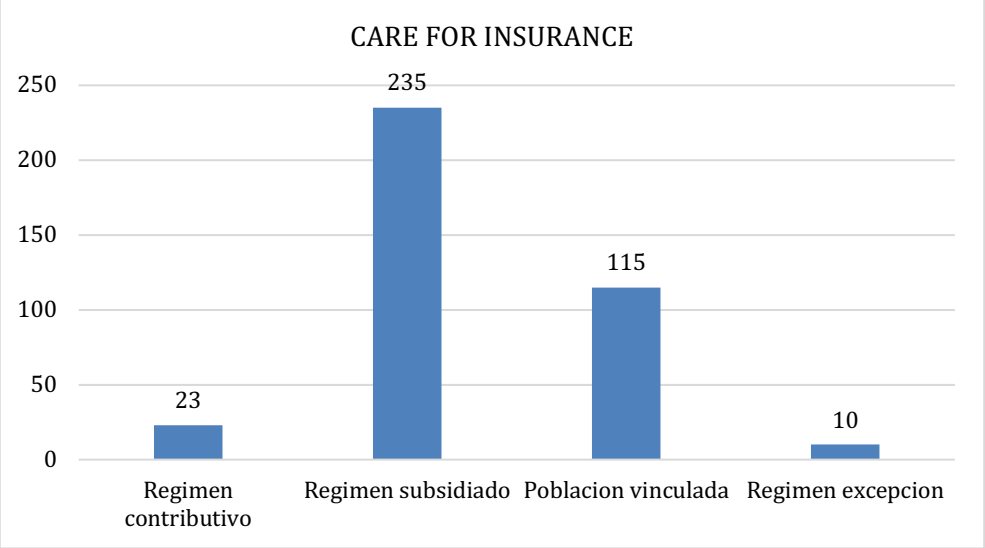

Figure 3 shows how the population in the department of Vichada is covered by the SGSSS. Once the research had identified the capacity of the health system in highly dispersed areas such as the department of Vichada, it was important to show the type of

insurance coverage of the population in the department. The research team was able to determine what type of insurance coverage the sample population had by means of the survey that was applied, yielding important results to determine access and the impact it would have on each of its components. First and foremost, it was determined that 61% of the population seeking health services belongs to the subsidized regime, which means that they have access to the services offered in the department. Another component of relevance in the result was the number of uninsured poor population or linked population that consult to health services, which total 30% of the sample, meaning that the SGSSS insurance has not been able to channel these inhabitants of the territory and due to the administrative connotation of the uninsured population, they would have problems in accessing health services.

Similarly, one of the main results of the research was to establish that 69.97% of the total population that sought health services in the 383 surveys applied was insured, making the insurer responsible for managing the population's risk, a situation that leads to organizing the network of services based on the needs of the patients.

For the research it is of vital importance to know the amount of services consumed by the inhabitants of Vichada in the providers that are enabled, being difficult to obtain the information, the research team will work with the RIPS of two providers of the department that agreed to measure the data.

In addition to this, the department has an underreporting of information that does not allow for adequate traceability of the consultations. For the providers in question, it should be taken into account that they are the ones with the largest number of affiliates in the department with a database of 50,000 affiliates, which corresponds to 68% of the total population that accesses health services in Vichada.

Table 4

Services provided by the network in the department

CARE PROVIDED BY PYP PROGRAMS IN VICHADA-2017	
PROGRAM	# TOTAL ANNUAL
PRENATAL CHECKUPS	QUANTITY
PRIVATE LENDERS	1164
PUBLIC LENDER	1061
TOTAL	2225
GROWTH AND DEVELOPMENT UNDER 10 YEARS OF AGE	QUANTITY
PRIVATE LENDERS	5992
PUBLIC LENDER	7911
TOTAL	13903
ORAL HEALTH	QUANTITY
PRIVATE LENDERS	1655
PUBLIC LENDER	5571
TOTAL	7226
FAMILY PLANNING	QUANTITY
PRIVATE LENDERS	9400
PUBLIC LENDER	3697
TOTAL	13097
CYTOLOGIC EXAMINATION	QUANTITY
PRIVATE LENDERS	725
PUBLIC LENDER	17
TOTAL	742
YOUTH CONSULTATION	QUANTITY
PRIVATE LENDERS	9743
PUBLIC LENDER	109
TOTAL	9852
ADULT CONSULTATION	QUANTITY
PRIVATE LENDERS	1117
PUBLIC LENDER	192

TOTAL	1309
VISUAL ACUITY	QUANTITY
PRIVATE LENDERS	91
PUBLIC LENDER	4
TOTAL	95

Note. Note. Result of the analysis of the RIPS versus the care provided in 2017, own elaboration.

The previous table number 4 shows us a consumption of services by the inhabitants of Vichada with an average total population of 73,000 thousand inhabitants according to DANE figures for 2017 allowing us to establish some situations such as: 1). If the population pyramid presented during the investigation with its respective age group for children under 10 years of age represents an average value of 18,000 infants for the department that require at least 2 visits in 12 months, which would give at least 36,000 thousand visits for the period, we refer to table number 4 of the RIPS where 13,903 visits are reflected, showing a lack of access to medical consultations for at least 62% of the infants in the Department, in the calculation only 38% of the children in Vichada would have access. 2). For the age group of inhabitants of fertile age from 14 to 44 years described in the research, there are about 31,000 people between men and women, in the table described, it can be seen that 1,3907 inhabitants of Vichada of fertile age received some family planning consultation in the 12 months of the period, resulting in 44.9% of the population, leaving 55.1% of the population without access to planning services, being of vital importance birth control in territories such as Vichada. 3). The definition of adult is given in the legal regulations in force **and** that pointing out the population group of Vichada we can refer to 45 to more than 60 years, corresponding to a population of 13318 inhabitants, evaluating the RIPS table the number of consultations is 1309, this allows to establish that 90% of adults in the department do not access to consult and that only 10% have a control or consultation for what is related to adulthood.

Figure 4

Proposed network model for the provision of health services in the department

Note. Note. Proposed reorganization of the network in Vichada, prepared by the company.

In figure 4 and as a result of the research according to the variables defined in the general objective to Determine the sufficiency and accessibility of the municipal and

departmental hospital network of Vichada, Thinking about the construction of a functional and operative proposal that allows generating the greatest possible access to the health services offered in the department, it is of vital importance to start with a network of services according to the needs of the population, a health care team related to the needs and a care model with tools that allow a better access to the services by the population of Vichada.

Discussion and Conclusions

The great discussion of the research process is directly related to how even the population is insured within the SGSSS, the indicators do not show improvement, being clearly a weakness of the local system, it is also important to mention that even the UPC is differentiated by territory and population, the territory has some geographical characteristics that makes the provision of services increases the cost in the production of each service.

The research was thought about how the provision of health services would be organized, it cannot be subject exclusively to the offer provided in local hospitals or health centers; from the data obtained by the research, several components should be organized, which could be given by; expansion of providers in areas where there is no health institution, extramural teams, formation of community health teams in areas of the department where there is no SGSSS actor and reorganization of the existing offer in the department so as not to duplicate services per provider.

In the same way, the research determined that due to the distance and geographic space to be covered, it is important to start a telehealth pilot plan to connect the communities that may have connectivity, energy flow and spaces to at least provide access to primary health care to the population (PHC). In the same way

It is also important to mention that the steering role in the department should be strengthened in order to reorganize the existing installed capacity and build a model of care with the differences inherent to the territory, where the creation of a single system can be explored in relation to the existing providers in the territory, as well as to establish the needs that are not being met from the contractual component with the existing insurers in the territory, all this understanding the administrative capacities of the territorial entity of the department.

Finally, it is important to establish with the Colombian Ministry of Health and Social Protection, local indigenous organizations, academia and territorial entities how to establish a plan to design a model of care according to the geographic and cultural needs and differential factors of the territory.

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