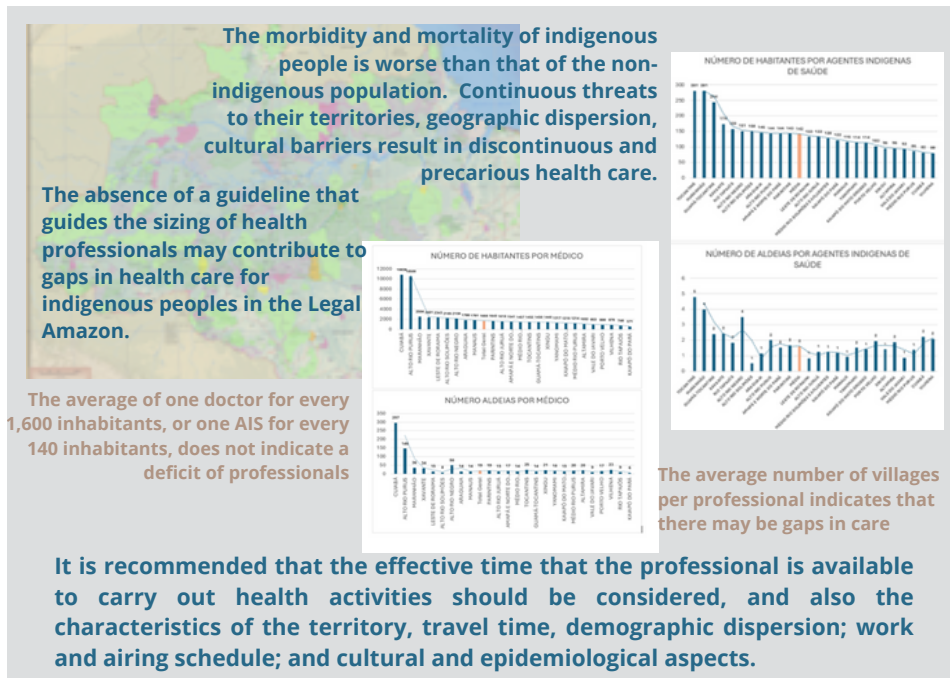


Panorama of health human resources in indigenous lands in the Legal Amazon

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Graphic Abstract



Abstract

The specificities of the indigenous health subsystem, particularly in the Legal Amazon, bring challenges to planning the provision of health professionals to work in indigenous territories, as there are still no standards and parameters that indicate what proportion is appropriate for indigenous areas. This article provides an unprecedented overview of the current situation of human resources working with Special Indigenous Health Districts (DSEIs) in the Legal Amazon. The data were obtained through the database registered in the Human Resources Management System of the Special Secretariat for Indigenous Health (SESAI). A descriptive analysis of human resources and infrastructure of primary care services for indigenous health was carried out. It was found that there is no standardization in the size of the workforce that works in indigenous health. It was not possible to identify whether such variations are related to the lack of a standard in the sizing of professionals, or whether they reflect the difficulty of retaining professionals in indigenous health, or even whether they are local adjustments to the profile of the territory. The difficulty in retaining professionals in indigenous health is multifactorial, and if associated with the lack of dimensioning of the workforce, it can generate care gaps.

Keywords: Health of Indigenous Populations. Health Personnel. Indigenous Peoples. Human Resources.

INTRODUCTION

According to the World Health Organization (WHO), half of the world's population living in rural areas has difficulty accessing appropriate health services, which is no different from the Brazilian context^{1,2}. The scenario is even more complex regarding the care of indigenous peoples, who face barriers to access to health, related both to the geographical dispersion of communities, as well as cultural barriers and continuous threats to their territories, contributing to discontinuous and precarious health care. and morbidity and mortality indicators worse than those of the non-indigenous population in the country³⁻⁵.

Several multisectoral strategies to expand health coverage in vulnerable populations have been adopted around the world, seeking to attract and retain health professionals, including improving working conditions, professional development and living conditions^{1,6,7}. The Organic Health Laws (8,080/1990 and 8142/1990)⁸, landmarks in Brazilian health policy, recognize the ethnic, territorial and cultural specificities of original peoples. The creation of the Indigenous Health Care Subsystem in Brazil (SASI-SUS), established in 1999⁹, and the publication of the National Health Care Policy for Indigenous Peoples (PNASPI), constitute advances in health policy aimed at these people in an attempt to mitigate immense inequalities and guarantee the right to health¹⁰.

The Subsystem was organized through the creation of Special Indigenous Health Districts (DSEI) distributed throughout the national territory^{3,10}. Another advance was the creation, in 2010, of an Indigenous Health Secretariat (SESAI), created from the struggle movements of indigenous peoples, and linked directly to the Ministry of Health (MS)¹¹.

Despite these considerable advances in the services provided to indigenous peoples through the creation of SASI-SUS, there are several challenges in implementing the PNASPI. One of the critical points is the planning of the workforce: how to size it considering the professional categories, specificities of

the territories and the sociocultural aspects of these people? This situation is faced by some countries in the world, which have health care systems for indigenous peoples, many of whom also live in remote areas¹. Faced with this challenge, the WHO, in the publication entitled "Workforce Indicators for of Staffing Need (WISN)", proposes a methodology for surveying the workforce needs of health professionals, based on the workload of each professional, the which time spent on different care activities is a reference for calculating how many professionals are needed to meet the demands of the service¹².

In Australia, for example, a plan to structure the health workforce of aboriginal peoples was launched, including the aborigines themselves in the preparation of the plan and stipulating targets for the percentage of aboriginal health professionals working in the service, with the aim of improving health outcomes. health outcomes, ensure cultural safety. The strategies used are the production and sharing of health information to assist in workforce planning, policy development, monitoring and evaluation, and continuous quality improvement and increased training and hiring of Aboriginal people to work in the health service¹³.

In relation to Brazil, some aspects must be analyzed in the strategies and parameters used for workforce planning. The Multidisciplinary Indigenous Health Team (EMSI), according to SESAI, is made up of doctors, nurses, nursing technicians and assistants, dental surgeons, oral health technicians and/or assistants, nutritionists, psychologists, indigenous health agents (AIS), indigenous sanitation agent (AISAN), among others¹⁴.

According to data available on the online portal of the Special Secretariat for Indigenous Health (SESAI) (SESAI), the network of primary care services for indigenous health is organized through 34 Special Indigenous Health Districts, which carry out their activities across 380 Hubs -Base, 1,209 Basic Indigenous Health Units (UBSI) 66 Indigenous Health Houses (CASAI), which, in turn, serve

as support for Multidisciplinary Indigenous Health Teams (EMSI)¹. There are around 813 EMSI, with a total of 20.3 thousand professionals in 2020. They provide health care to 305 different ethnicities, making up a population of 776 mil indigenous people, distributed in 6,216 villages, in 2020².

In addition to health teams, PNASPI also foresees the systematic participation of anthropologists, educators, sanitary engineers and other specialists and technicians considered necessary. In this way, SASISUS workers comprise both EMSI health professionals and other workers based in administrative headquarters, responsible for organizing and managing health care and sanitation actions¹⁴.

Despite the inclusion of indigenous peoples in university quota systems, the incorporation of health professionals who are indigenous does not have any structured process¹⁸. In 2020, 65% of health professionals working in the DSEI were indigenous², the majority made up of AIS and AISAN, oral health technicians or assistants (56%), nursing technicians (30%), of which only 8.5 % of the nurses are indigenous³.

In relation to medical professionals, the majority of medical professionals who work at DSEI come from the "More Doctors for Brazil Project" (PMMB). Of the 543 doctors who worked in indigenous health between 2017 and 2018, 372 came from PMMB^{14,19}.

Outsourced professionals also work in the indigenous health subsystem who mainly develop activities in the areas of security, general services, cleaning, secretarial services, maintenance, transportation, among others.

Regarding the information systems where professionals are registered, there are three databases. The Human Resources Management System (SESAI-RH) of the Special Secretariat for Indigenous Health is where workers are registered under outsourced contracts with the purpose of monitoring the workforce working in indigenous health care teams through SESAI, and doctors hired through an agreement and the Mais Médico pelo Brasil Program, managed in 2020 by the Agency for the Development of Primary Health Care

(ADAPS) which uses the Program Management System (SGP)²⁰.

In addition to the two human resources management systems mentioned above (SESAI-RH and SGP), SASISUS workers are also registered in other care and registration information systems, such as SIARH-MS, where workers with a contract as a civil servant are registered. career at the Ministry of Health; the National Health Registry (CNES), the Indigenous Health Care System (IASI), and registration in the Primary Care Information System (SIAB) and the e-SUS Primary Care System (e-SUS AB) is possible, as they are not exclusive systems of the indigenous health subsystem.

The DSEI implementation process has been outsourced since 1999, due to the difficulties that the National Health Foundation (FUNASA) would have in managing the hiring of human resources and also due to a strategy of decentralizing the service. In this way, health care was carried out by institutions affiliated with FUNASA, such as non-governmental organizations, municipal health departments, among others^{21,22}. This strategy continued with the creation of SESAI in 2010, in which the vast majority of indigenous health professionals (90%) are hired by Social Organizations (SO), which participate in periodic tenders to manage the workforce. For this reason, professionals do not always have their contracts renewed, which brings a series of impacts, such as the dismissal of all workers from a DSEI in a given period, for later rehiring by another SO, contributing to the high turnover of professionals in health¹⁵.

There is no guideline that guides the sizing of health professionals at PNASPI^{3,10}. The National Primary Care Policy (PNAB), revised in 2017, presented the criterion that the minimum number of inhabitants for a family health team in a remote rural area is 2000 people, and the maximum of 750 people for a one-to-one Community Health Agent (CHA) in areas with large population dispersion, which is equivalent to an average of 1.33 ACS for every 1000 inhabitants (National Primary Care Policy. Ordinance no. 2,436, of Septem-

ber 21, 2017). There are still no studies that indicate whether this proportion is appropriate for indigenous areas³.

This study provides an unprecedented overview of the current situation of human resources working with DSEIs in the Legal Amazon. The data were obtained from the secondary database registered in the SESAI Human Resources Management System (SESAI-RH).

METHODOLOGY

This is an exploratory quantitative study of the distribution of the workforce of indigenous health professionals in the DSEI of the Legal Amazon. Human resources indicators were analyzed using secondary data from SIASI and SESAI-RH from the Ministry of Health.

The proposal made by Donabedian for evaluating health services separates the basic components for a quality assessment into three categories: structure, process and result, being useful in determining data on the presence or absence of attributes that constitute or define quality²⁴.

The "structure" component covers the human, physical and financial resources used in the provision of health care, as well as the organizational arrangements and financing mechanisms for these resources. The "process" component refers to the activities that constitute health care, and involve the interaction of health professionals and the assisted population. The "results" component concerns changes in the population's health status, promoted by the care received²⁴.

For the present study, the "structure" axis was analyzed, with the sub-dimension of human resources (HR) being selected. To this end, an evaluation matrix was created with selected indicators. The DSEI workforce data used in this work only considered workers registered with SESAI-HR.

The data were tabulated and analyzed using Excel software version Microsoft 365. The results were presented individually by

Demographic data are from the Indigenous Health Care Information System (SIASI).

In this sense, we intend to present a descriptive analysis of human resources indicators in the DSEI of the Legal Amazon in the year 2020, with the aim of contributing to the development of human resources planning strategies for indigenous health in the Legal Amazon.

DSEI and consolidated from the DSEI that make up the Legal Amazon region.

The Legal Amazon region was considered to be the territory that covers the states of Amazonas, Pará, Amapá, Roraima, Acre, Rondônia, Maranhão, Tocantins and Mato Grosso. There are 25 DSEI, namely: Altamira, Alto Rio Juruá, Alto Rio Negro, Alto Rio Purus, Alto Rio Solimões, Amapá e Norte do Pará, Araguaia, Cuiabá, Guamá-Tocantins, Kaiapó do Mato Grosso, Kaiapó do Pará, Leste de Roraima, Manaus, Maranhão, Médio Rio Purus, Médio Rio Solimões e Afluentes, Parintins, Porto Velho, Rio Tapajós, Tocantins, Vale do Javari, Vilhena, Xavante, Xingu.

Considering that the majority of the indigenous population (around 94%) assisted by DSEI Araguaia is distributed between Mato Grosso and Tocantins, states that comprise the Legal Amazon, and that only 6% is located in the state of Goiás, data from DSEI Araguaia were considered in full (including Goiás) to facilitate analysis²⁵.

The analyzed database went through a cleaning and qualification process to reduce inconsistencies identified in the fields of a) Hiring period: only workers active in the analysis period were selected, that is, in 2020; b) Employment relationship: records of professionals with employment contracts, partners, PMM and servers were included, and outsourced workers were excluded as they were cleaning, security professionals, etc.; originating from PROVAB, since the program was terminated in 2017; and self-employed as it

is not a method of hiring health professionals.

Based on the variable “name of the professional category”, which presents the codes of the Brazilian Classification of Occupations (CBO), grouping was carried out into categories of interest: doctors, nurses, dental surgeon and oral health technician/assistant, indigenous health health and sanitation agents. The definition of the number of professionals in each category per DSEI was calculated by the formula: number of days worked in the year by each professional divided by the number of days in a year, that is, 365. In this way, a professional who was hired throughout the year was counted as a professional. Those that were only active for a few months of the year were counted proportionally. This methodology makes it possible to quantify the effective work capacity available in the year in each DSEI, minimizing possible distortions that may occur with transversal methodologies, in which the total number of professionals is used on just one date in the year, or which use the number of vacancies available per year. DSEI, regardless of whether or not they are completed.

It is worth noting that the database sent did

not show the working hours of each contractor. Therefore, the number of professionals did not take into account whether they are hired part-time (less than 40 hours per week) or full-time (40 hours per week).

Finally, it is possible that registration in the SESAI-HR System may be out of date, as the focal points responsible for registration encounter difficulties in capturing information for registration.

The demographic data are from the Indigenous Health Care Information System (SIA-SI), accessed through the Citizen Information Service (SIC), in a request to the Ministry of Health made in December 2021, process no. 25072.007625/2022-0125. This refers to the active population on December 31, 2020 registered in SIASI in villages and camps, with extraction from the database carried out on 08/24/2021.

The present study is exempt from submission to the research ethics committee, as provided for in resolution no. 510 of the National Health Council, dated April 7, 2016, as it is a study that uses a database whose information is aggregated, without possibility of individual identification (Brasil, 2016).

RESULTS

SESAI/MS, through SIC25, passed on the database of the Human Resources Management System – (SESAI-RH). According to the Ministry of Health itself, SESAI-RH is not used to monitor career civil servants who work at SASISUS. The Ministry of Health did not make information available from the servers of the MS Human Resources Administration System - SIARH-MS. However, the SESAI-RH database sent contained only 8 professionals classified as "servants/assigned" out of the 27,191 records (Brasil, 2017).

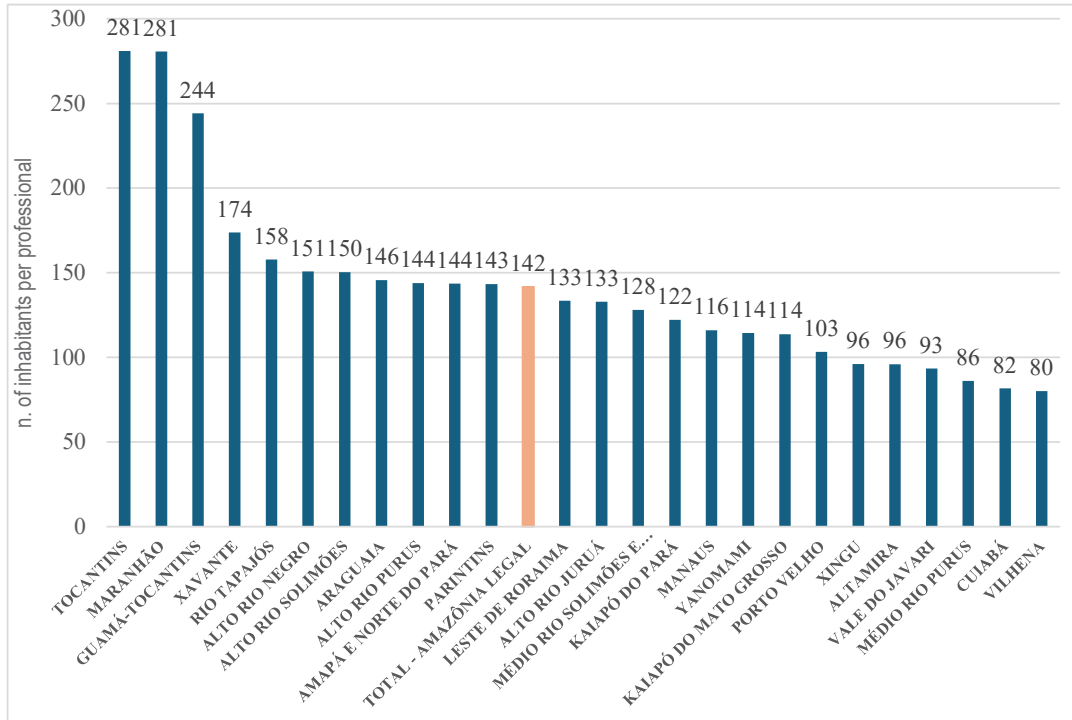
In total there are 10,458.6 workers of all categories throughout the Legal Amazon, during the year 2020. There are 3,203.6 Indigenous Health Agents (AIS), 264.4 dental surgeons, 1077.4 nurses and 268.8 doctors.

The professional category with the greatest proportional weight is AIS, representing 30.6% of the total number of workers registered with SESAI RH in 2020, followed by nursing assistants and technicians, representing 25.1%, and Indigenous Sanitation Agent (AISAN) representing 13.3 and nurses representing 10.3% of workers.

The number of inhabitants per professional is an indicator that estimates the average number of people that a professional is responsible for, and allows the workload to be inferred in terms of population served. The number of villages per professional reflects the geographic dispersion that each professional needs to serve. The results are presented by each professional category.

Indigenous Health Agents

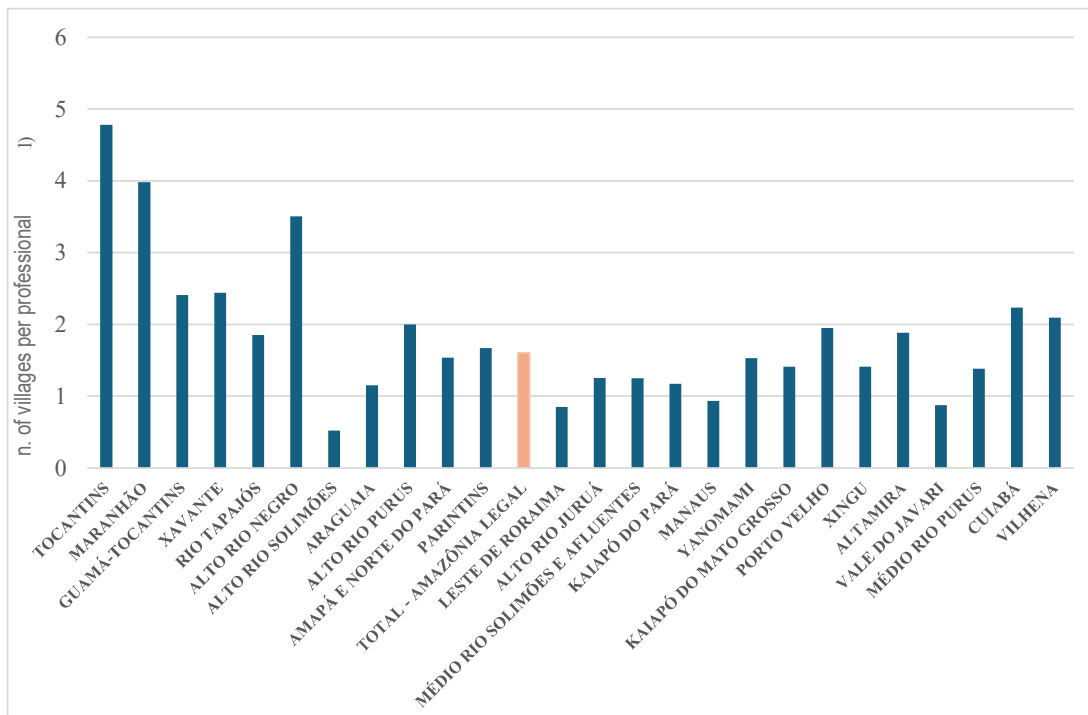
Graph 1 - Number of inhabitants per Indigenous Health Agent in the DSEI of the Legal Amazon, 2020.



Source: SESAI-RH and SIASI, 2021.

Indigenous Health Agents

Graph 2 - Number of villages per Indigenous Health Agent in the DSEI of the Legal Amazon, 2020.



Source: SESAI-RH and SIASI, 2021.

Graph 3

The number of inhabitants per Indigenous Health Agent in the DSEI analyzed in the Legal Amazon was 142 and the number of villages was 2. In graphs 1 and 2, the DSEI Tocantins (281 inhabitants, 5 villages) and Maranhão (281 inhabitants, 4 villages) have a number of inhabitants and a number of villages above the overall average presented. The DSEI Guamá-Tocantins also has a population per health agent greater than the average (244), but has an average equal to the general one in the distribution by villages (2). The DSEI Médio Rio Purus (86), Cuiabá (82) and Vilhena (80) have the lowest proportion of inhabitants per health agent. Regarding the distribution of villages by Health Agents, most DSEI are close to or below the general average.

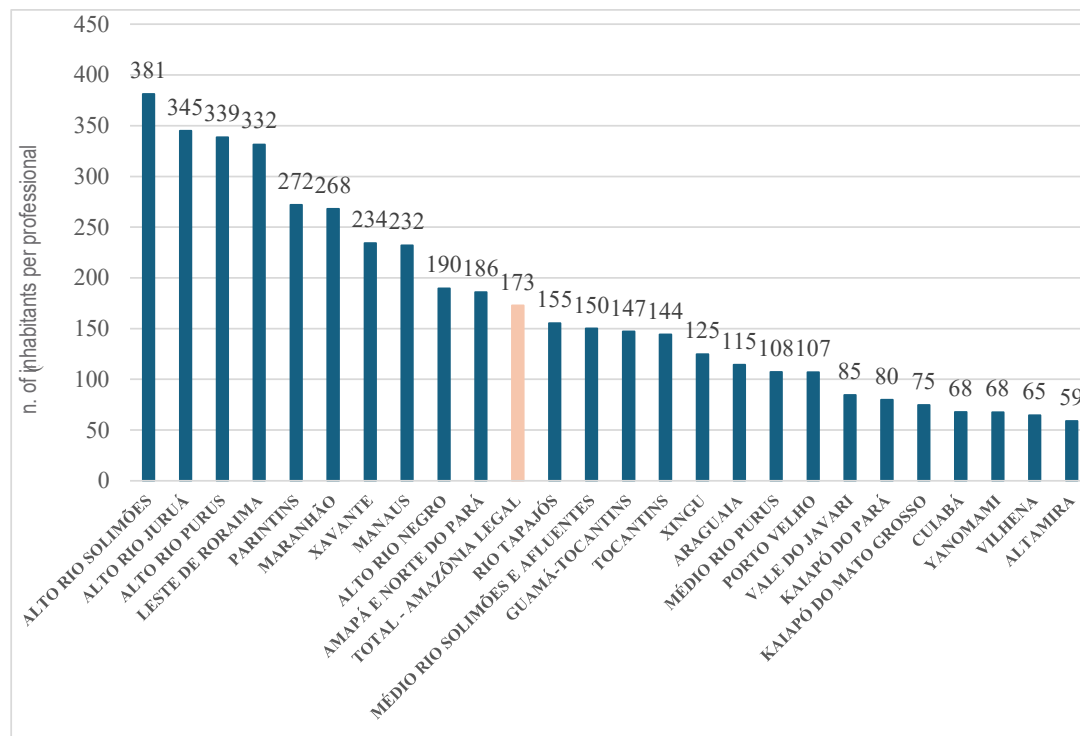
Graph 4

The number of inhabitants per nursing assistants/technicians in the Legal Amazon was 173 inhabitants per professional and 2 villages per professional in the DSEI analyzed. The DSEI Alto Rio Solimões (381), Alto Rio Juruá (345) and Alto Rio Purus (339) are those with the highest proportion of inhabitants in relation to nursing assistants/technicians, while the DSEI Yanomami (68), Vilhena (65) and Altamira (59) have the lowest proportion.

Regarding the distribution of villages per professional, the DSEI Alto Rio Purus (5), Alto Rio Negro (4) and Maranhão (4) have the highest number of villages per professional, while several DSEI have a lower proportion than the average of analyzed data.

Nursing Assistants and Technicians

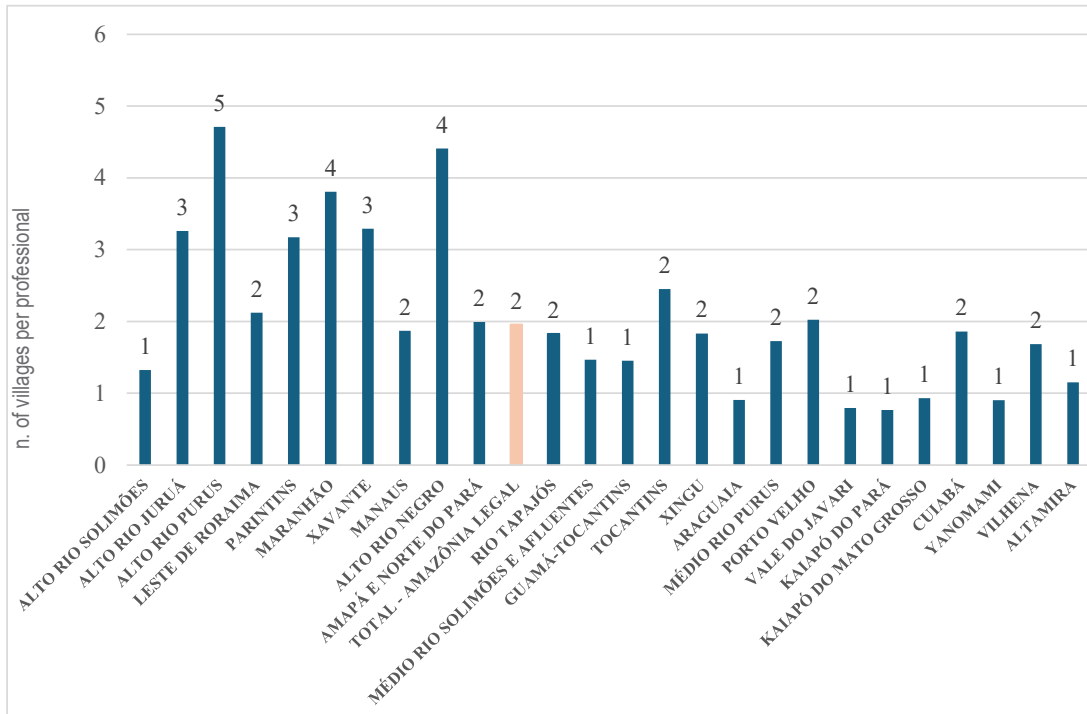
Graph 3 - Number of inhabitants per nursing assistants and technicians in the DSEI of the Legal Amazon, 2020.



Source: SESAI-RH and SIASI, 2021.

Nursing Assistants and Technicians

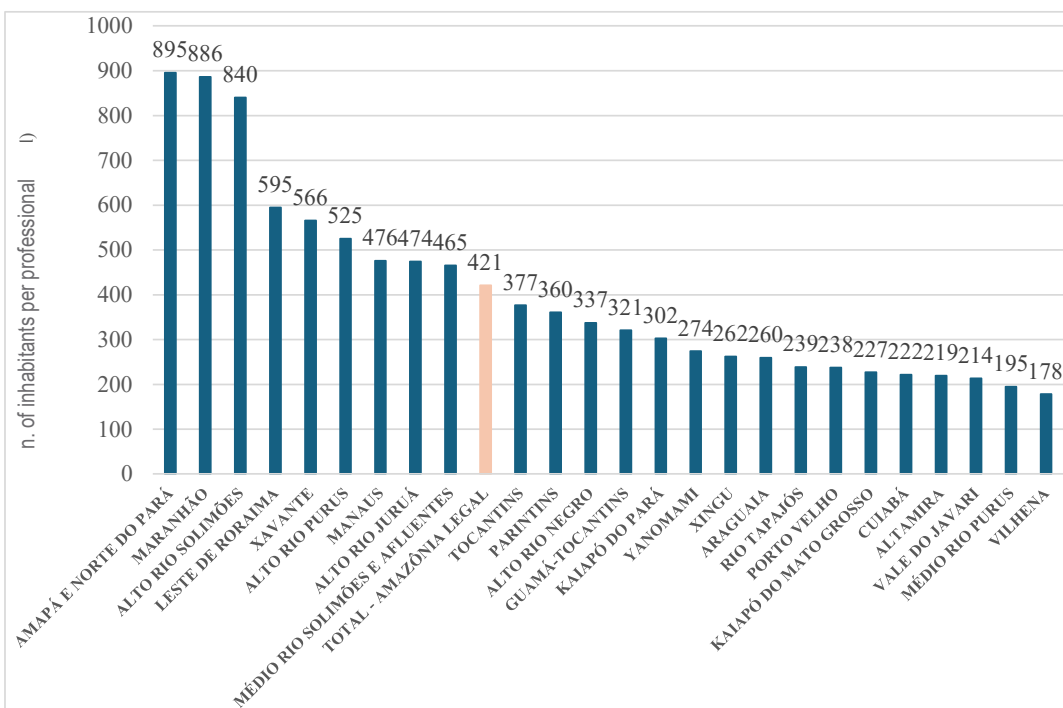
Graph 4 - Number of villages per nursing assistants and technicians in the DSEI of the Legal Amazon, 2020.



Source: SESAI-RH and SIASI, 2021.

Nurses

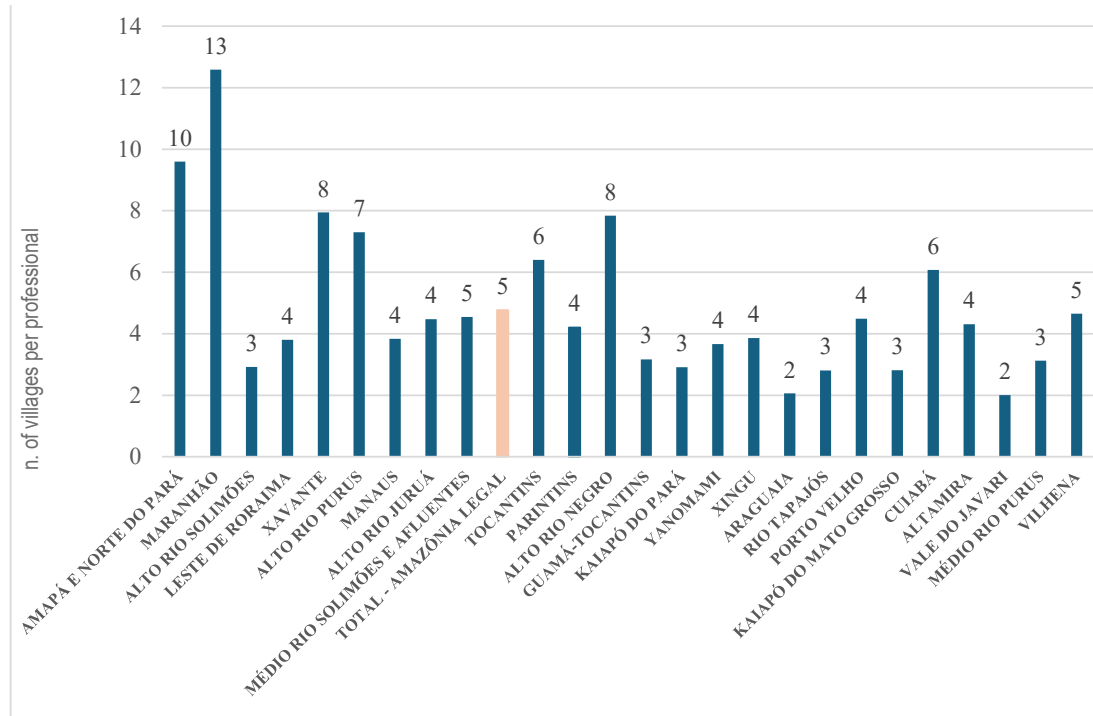
Graph 5 - Number of inhabitants per nurse in the DSEI of the Legal Amazon, 2020.



Source: SESAI-RH and SIASI, 2021.

Nurses

Graph 6 - Number of villages per nurse in the DSEI of the Legal Amazon, 2020.



Source: SESAI-RH and SIASI, 2021.

Graph 6

The number of inhabitants per nurse in the DSEI analyzed was 421. The DSEI Amapá and Norte do Pará (895), Maranhã (896) and Alto Rio Solimões (840) have the highest proportion, while the DSEI Vale do Javari (214), Middle River Purus (195) and Vilhena (178) have the lowest.

On average, each nurse is responsible for 5 villages, however this number is higher in the DSEI Maranhão (13), Amapá and Norte do Pará (10), Xavante (8) and Alto Rio Purus (8). The DSEI Vale do Javari (2) and Araguaia (2) have the lowest proportion of villages per nurse.

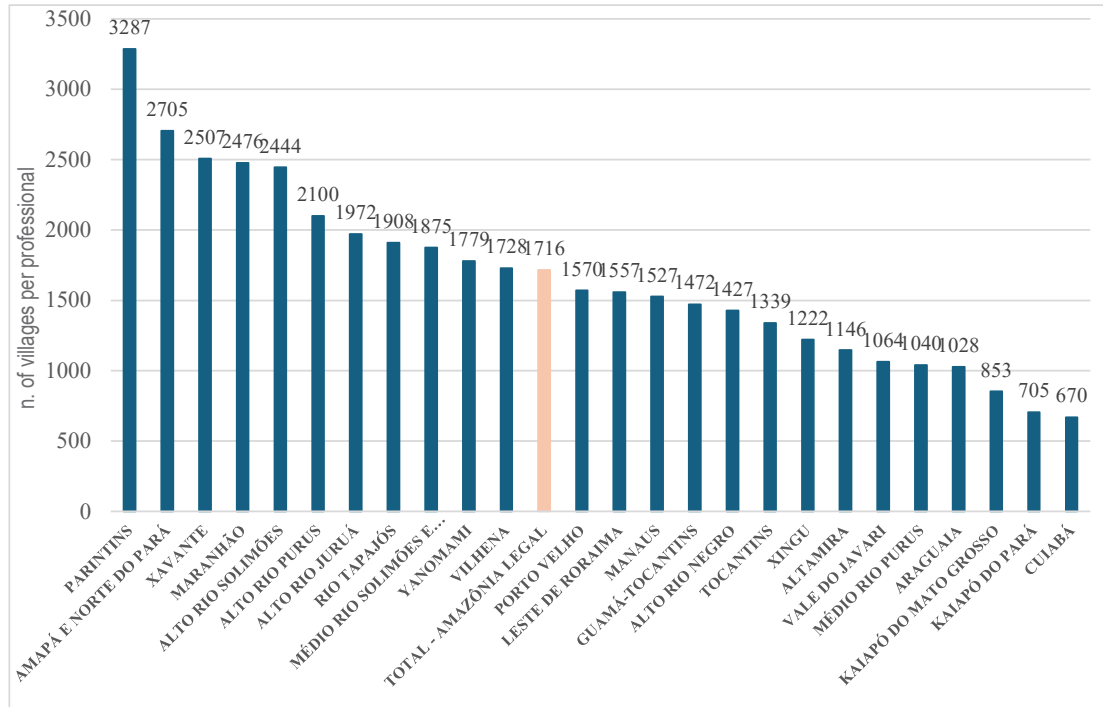
Graph 8

The distribution of inhabitants by dental surgeons also presents great variability, with an average of 1716 people per professional in the DSEI of the Legal Amazon. The DSEI Parintins (3287), Amapá and Norte do Pará (2705) and Xavante (2507) have the highest proportion, while the DSEI Kaiapó do Mato Grosso (853), Kaiapó do Pará (705) and Cuiabá (670) have the smallest proportion.

In relation to the number of villages per professional, the average is 19. The DSEI Vilhena (45), Parintins (38), Xavante (35) and Maranhão (35) have the highest proportions. The DSEI Alto Rio Solimões (8), Araguaia (8) and Kaiapó do Pará (7) have the smallest proportions.

Dental Surgeons

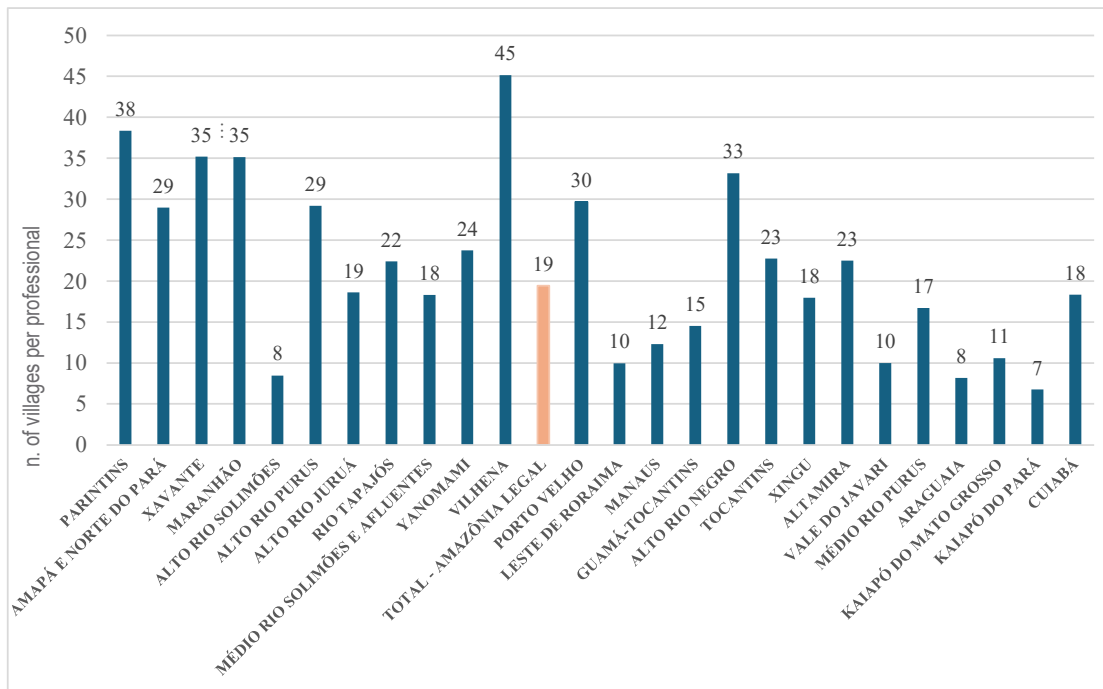
Graph 7 - Number of inhabitants per dental surgeon in the DSEI of the Legal Amazon, 2020.



Source: SESAI-RH and SIASI, 2021..

Dental Surgeons

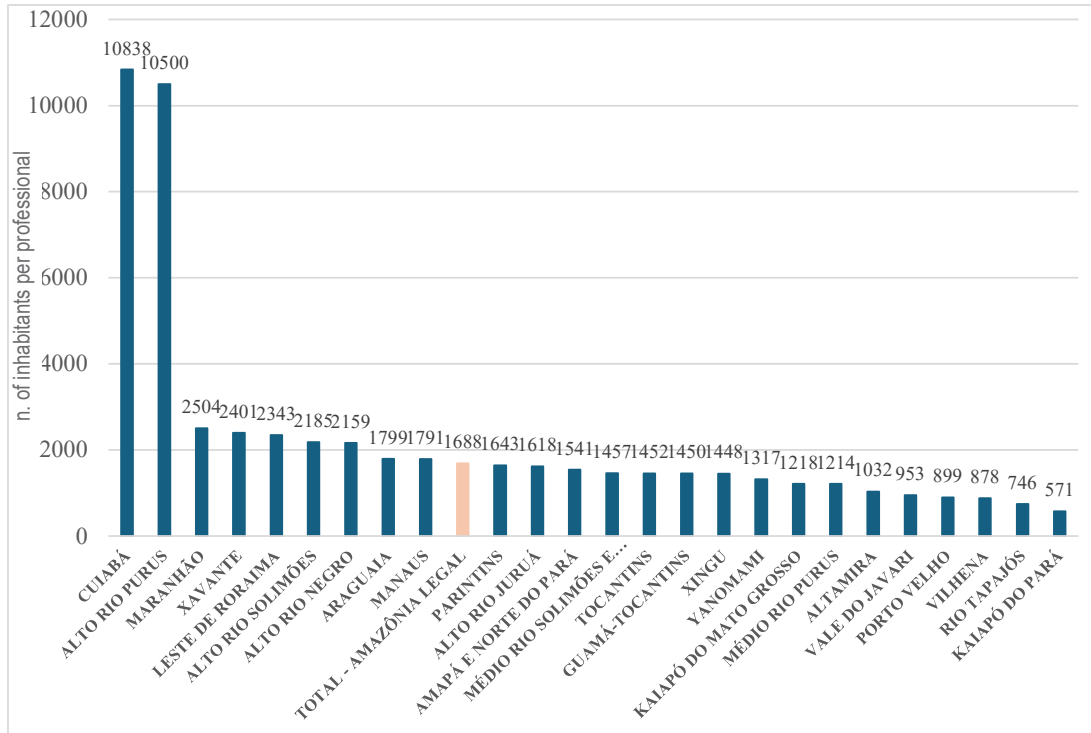
Graph 8 - Number of villages per dental surgeon in the DSEI of the Legal Amazon, 2020.



Source: SESAI-RH and SIASI, 2021.

Medical doctors

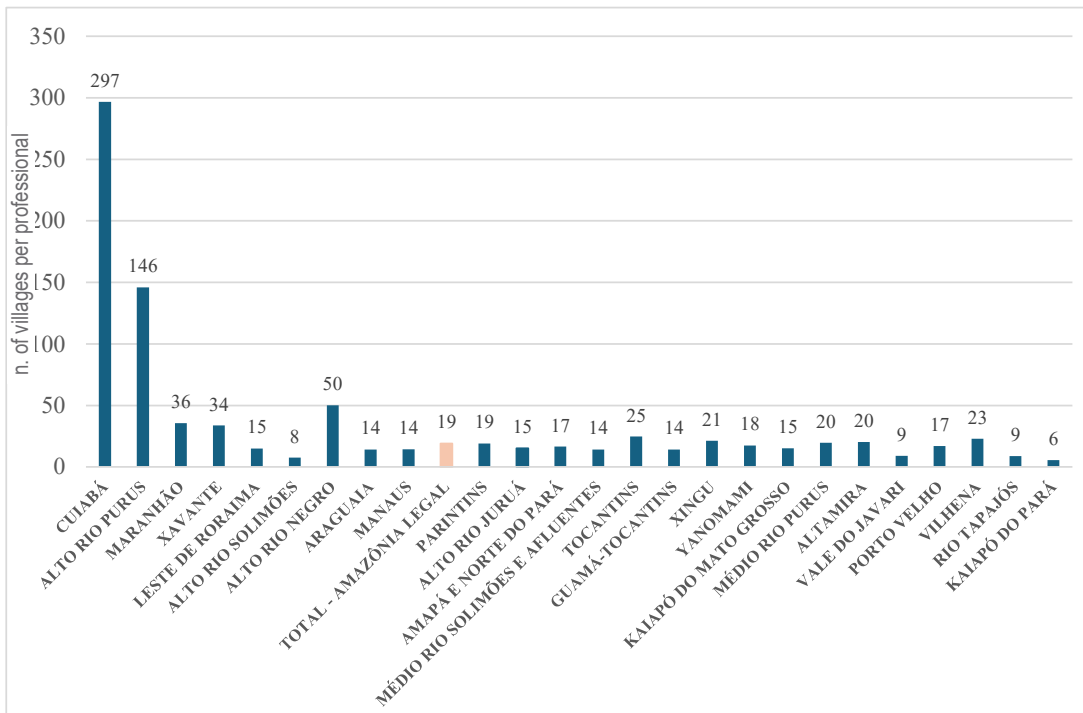
Graph 9 - Number of inhabitants per doctor in the DSEI of the Legal Amazon, 2020.



Source: SESAI-RH and SIASI, 2021.

Medical doctors

Gráfico 10 - Número de aldeias por médico nos DSEI da Amazônia Legal, 2020.



Source: SESAI-RH and SIASI, 2021.

Graph 10

Following the descriptive analyses, the number of inhabitants per doctor in the DSEI of the Legal Amazon was 1688. In this analysis, it is important to highlight that, according to the data sent, the DSEI Cuiabá had 0.6 doctors/year and the DSEI Alto Rio Purus 1. In addition to these DSEI, the DSEI Maranhão (2504), Xavante (2401) and Leste Roraima (2343) stand out with a proportion of doctors above the general average. The DSEI with the lowest proportion of inhabitants per doctor were Vilhena (878), Rio

Tapajós (746) and Kaiapó do Pará (571).

In relation to the proportion of the number of villages served by a doctor, the DSEI Cuiabá (297) and Alto Rio Purus (148) stand out, with values well above the average of the DSEI of legal Amazonia, which stood at 19. They also presented a number of very high villages for each doctor the DSEI Alto Rio Negro (50), Maranhão (36) and Xavante (34). The lowest proportions are found in the DSEI Kaiapó do Pará (6), Alto Rio Solimões (8), Rio Tapajós (9) and Vale do Javari (9).

DISCUSSION

The shortage of professionals in remote areas is recognized as a global problem, in developed and developing countries, and results in a health supply with low equity^{7,28}. The precariousness of employment relationships, a reality in all sectors of society, takes on relatively greater aspects for professionals who work in indigenous health.

The Ministry of Planning, in a document published in 2017, highlights SESAI's weaknesses in the management of people in indigenous health, such as the high turnover of professionals, among other reasons, due to the difficulty of establishing themselves in areas of difficult access and instability in the professionals' employment relationship. EMSI, hired by private entities contracted under the Consolidation of Labor Laws (CLT) regime; difficulties in approving new competitions by the Ministry of Planning and Budget; absence of specific legislation, such as quotas for indigenous professionals, regulation of the profession of Indigenous Health and Sanitation Agent; and rules for holding competitions²⁹.

In recent years, the quantitative deficit of professionals working in indigenous health has been decreasing, but unpreparedness to work in contexts of cultural diversity is still common. The high turnover of professionals working in indigenous health is also a documented problem. Difficulties in adapting to daily work, fragility in transparency and

criteria adopted in selection processes and political influences in sizing the number of professional vacancies and recommending people for vacancies are some factors related to this phenomenon. Most professionals are recently graduated and seek new challenges and professional insertion, with little profile to deal with complexities in intercultural relations^{18,30}.

Following the trend of quantitative increase in professionals, the number of professionals per inhabitant found in the present study does not indicate, numerically, a deficit of professionals. The average of one doctor for every 1,600 inhabitants, or one AIS for every 140 inhabitants, for example, is higher than that proposed by PNAB for remote rural areas²³. The average number of villages per professional indicates that there may be gaps in care, especially in relation to higher education professionals, with a high proportion of villages, in which it would not be possible for higher education professionals to regularly visit at a frequency that would allow for continuity of care, or that the community may eventually have to travel to find the health professional to receive assistance.

Another important finding in the survey carried out was the difficulty in identifying a standardization in the number of professionals who work in the different DSEI in the Legal Amazon, considering the specificities of the territories and geographic distribution, as

shown in the distribution of professionals by villages. While in a DSEI like Alto Rio Negro, with remote areas, a doctor is responsible for fifty villages, in the DSEI Kaiapó do Pará a doctor is responsible for six villages.

Several factors may be related to the failure to identify a pattern in the number and proportion of professionals found in the present study. Among them, the absence of parameters in the sizing of professionals by the Ministry of Health, associated with the difficulty of attracting and retaining professionals in indigenous health, and the influence of the historical process of constitution of districts and political disputes (of indigenous groups and municipal actors/ state and federal) in human resources agreement processes. Likewise, they could be the result of local adjustments to the profile of the territory (demographic dispersion, number of villages and difficulties in geographic access). Under-reporting or lack of registration update in SE-SAI RH should also be considered as a factor in the variation between DSEI.

The dimensioning of professionals for the territories is of fundamental importance. To date, there is no established standard that regulates the sizing of professionals for this role. As previously mentioned, the proportion of people per family health team determined in the PNAB should not be used as a parameter to be applied in special indigenous health districts, as with such variation in territorial extension, geographical features and population dispersion, travel time, found in the Legal Amazon, an EMSI professional has an effective workload, subject to all these aspects.

When the dimensioning of professionals is based on the professional ratio per number of inhabitants, the demand of each territory and the different activities carried out

by each professional are not taken into account. Still little used, the WISN method, validated by the WHO, proposes a calculation of the number of professionals from different categories needed to deal with the workload of a territory. To do this, the available time of each professional, the standard activities carried out and the components of the workload must be taken into account¹².

In indigenous territories, the dimensioning of professionals must also take into account the effective working hours of each professional. In other words, the time that the professional is actually available to carry out their health activities, considering the professional's travel time in the territory, the logistical difficulties in placing EMSI in the territories, the demographic dispersion, and the cultural and epidemiological aspects that interfere with the profile of services provided.

Another aspect to be considered is the work regime of each professional. While in urban centers, professionals generally work 40 hours a week, in remote areas the model of intensive or uninterrupted work schedules is predominant. Although this model is implemented in many DSEI, there is no specific labor regulation, and the only legal reference is an agreement signed between the Public Ministry of Roraima and SESAI, which provides for a work schedule of 30 days in area and 15 days of rest³¹. In this way, an indigenous health professional would remain in the area for 240 days a year, with 120 days off. If we add the mandatory 30-day vacation, the indigenous health professional remains in the field 215 days a year, for 140 days of rest. In other words, for every 3 professionals accounted for in a DSEI, there is effectively a workforce equivalent to 2 professionals, without considering commuting time.

CONCLUSION

The lack of standardization in the dimensioning of the indigenous health workforce can mean large discrepancies in the effective proportion of professionals working in indigenous communities.

It was not possible to observe the distance or access difficulties between each village, which may further contribute to some communities not receiving visits from health professionals. Although a deficit of profes-

nals has not been numerically identified in the average of DSEIs in the Legal Amazon, the hypothesis is that given the geographic dispersion (average of villages per professionals) there may be care gaps.

Aiming to contribute to the debate about the size of the workforce working in indigenous health, this work identified that a fundamental aspect to be considered is the effective time that the professional is available to carry out health activities, taking into account characteristics of the territory, such as professional travel time, demographic dispersion; the scale of work and airing; the cultural and epidemiological aspects of each territory.

In the present study, it was not possible to analyze the impact of professional turnover in care, since the indicator number of professionals per DSEI per year considered the effective work capacity, without considering the number of vacancies offered and whether or not they are filled in the entire the period of the year.

ther or not they are filled in the entire the period of the year.

The difficulty in retaining professionals in indigenous health is multifactorial, involving precarious relationships, the absence of a career plan, challenging work conditions, geographic and cultural barriers, and lack of knowledge and unpreparedness of health professionals to deal with intercultural contexts, among others. It is possible that the high turnover of professionals associated with the lack of dimensioning of the workforce creates gaps in care and discontinuity of health care in the most remote regions.

Future studies, carried out in conjunction with SESAI and district health councils, can deepen the analysis and offer support for the qualification of the human resources management policy used in indigenous health, aiming to qualify the care offered and improve the health indicators of this population.

CRediT author statement

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All authors have read and agreed to the published version of the manuscript.

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