Healthcare Networks and comprehensive care for people living with HIV and AIDS

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Abstract

The chronic scenario of AIDS requires managing patient stability using antiretrovirals. Thus, some Brazilian municipalities the process of decentralization of care for Primary Health Care began. Clarity about the distribution of health resources in a territory is essential to identify the possibility of decentralized work. The objective of this study was to characterize the spatial distribution of municipal institutions of Primary Health Care and others in the city of São Paulo, that would potentially tend to people living with HIV. An exploratory study was performed using a geoprocessing technique with an online tool of data from secondary sources. The Southern and Southeastern regions are the most populous and record the largest number of diagnoses and health resources, among the 817 service centers mapped in the municipality. It was observed that periphery areas do not have specialized services. The Central region has the best proportion of population and basic units, followed by the Western, Southeastern, Northern, Eastern and Southern. Regarding the proportion of people with HIV and Primary Care Centers, the same classification is repeated, despite the discrepancy of the Central region to the rest. It is concluded that the spatial distribution of municipal health institutions can be considered a potential start of a decentralization process, although there are regions with less health coverage. However, it is necessary to invest in professional qualification and physical restructuring.

Keywords: Health Services, Primary Health Care, Continuing Health Care Network, HIV, Acquired Immunodeficiency Syndrome.

INTRODUCTION

Throughout the history of Human Immunodeficiency Virus (HIV) infection and Human Immunodeficiency Syndrome (AIDS), it is possible to identify different levels of complexity in the healthcare of people living with HIV (PLHIV).

Attention to PLHIV in Brazil is strategically planned and monitored by the Ministry of Health, based on the actions of the Department of Surveillance, Prevention and Control of STIs, HIV/AIDS and Viral Hepatitis. Among many guidelines, the care of PLHIV in Primary Health Care (PHC) and in other sites of the Healthcare Network (HCN) has been considered as a strategy of decentralizing actions and consequently increasing coverage and access of SUS users to the prevention and treatment of HIV/AIDS infections[1].

National epidemiological data indicate that throughout the history of the AIDS epidemic until 2017, 882,810 cases were diagnosed; of which 576,245 (65%) were in males, 212,446

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(24%) within the white population and 154,638 (17.5%) within the brown population. For the records where schooling is mentioned, more than half of the cases correspond to people who had not studied or who had not completed elementary and high school. According to the exposure category, in 154,505 (17.5%) of the cases the contamination occurred by heterosexual relationship and in 149,283 (16.9%) cases it was by homosexual relationship. Injection-based drug users totaled 59,141 (6.6%) reports over the years[2].

Given the current scenario of the disease's chronicity, the management of stable patients using antiretroviral therapy (ARV), with simplified treatment regimens has been observed. This reality and the perspective of equity allowed some Brazilian municipalities to start the process of decentralizing care of specialized services and outpatient clinics for Primary Health Care (PHC). This is a shared management proposal between the primary network, represented by the Basic Health Unit (BHU), and the secondary network, represented by the Specialized Care Service (SCS)[3].

The possible decentralization of health care give the PHC professional the responsibility to recognize and meet other health needs, with the aim of strengthening the epidemiological profiles of the area of activity[4]. The AIDS landscape has changed over the years, and in view of numerous aspects, health and nursing care must accompany such transformations.

From the perspective of decentralized assistance to PLHIV in PHC, services must comply with previously established criteria. Asymptomatic, stable patients with indication for first-line treatment should be seen at the BHU, while symptomatic patients, co-infected, pregnant women and children, as they involve greater management complexity, should be referred to the Specialized Care Services (SCS)[3].

As a way to identify and meet the health needs of individuals in the context of the Unified Health System (SUS), the Health Care Network (HCN) was proposed in 2010. The HCN proposes that the relationships be horizontal, seeking to correct the clinical and contextual fragmentation. The objective of the HCN is to provide comprehensive, quality, resolute care in a regionalized manner, integrating the various points of care that, in fact, meet the needs of the population[5].

It is noteworthy that PHC principles, such as access, longitudinality, care coordination and comprehensiveness, enable better recognition of the real needs of the population, thus allowing more adequate resources to be made available[6-7].

Within the PHC and from the perspective of HCN, comprehensive care and health needs must go beyond the biological and clinical nature in order to articulate individual and family health needs with social needs. This includes rights and citizenship, guaranteed not only by health services, but especially in the intersectoral space, valuing interpersonal relationships and making social participation explicit[4].

Integrality emerged in opposition to the process of intense specialization of medical practice and came to be contemplated by two complementary perspectives. In the foreground, it includes the perspective of health promotion, protection, recovery and rehabilitation actions at all levels of care in the system. In the background and complementary to the first, it incorporates the form of professional action on the biological, psychological and social dimensions of individuals, families and communities. This ensures the continuity of care at different levels of complexity as a consequence of the articulation of a set of public policies[8].

Achieving comprehensive care in PLHIV is still a challenge. It involves both the characteristics of health service and practices, as well as the effectiveness of access, justice and democracy. These operate through different technologies that expand the understanding of HIV/AIDS to programming and beyond the technical and procedural actions of health professionals[9]. Thus, it is understood that the proximity of health services and knowledge about the territory where PLHIV live and work favors expanded and comprehensive health care.

Beyond geographical space, the territory is a living space of relationships, a social construction, understood from the system of objects, actions and the dialectic of space itself. A space becomes a territory when it is in a constant process of construction and change, in

the relationship between the materiality of things and life. By guiding studies on the distribution of diseases resulting from this interaction, the concept takes into consideration that a society's living and working conditions are related to the health-disease process[10].

The object of this study is the possibility of municipal health resources working towards full care for PLHIV. Comprehensive care is comprised of prevention and monitoring of diagnosed cases, avoiding new cases and worsening the disease, with consequent disability and death. In addition, comprehensive care should favor living and working conditions that are sufficient to maintain the lives of PLHIV and those who live or cohabit with it. Given the above, the present study questions how municipal health facilities are disposed in a given territory and how they can, in the identified arrangement, correspond to the concept of HCN and the principle of comprehensiveness for the health care of PLHIV?

It is increasingly important for professionals to develop knowledge and tools to support their practices, especially those arising from changes in the epidemiological profiles of the population. The relevance of the study lies in the growing demand from PHC health services to deal with various health problems, including HIV/AIDS infections. The routine of health actions must be instrumentalized to identify vulnerabilities, meet health needs and adopt strategies that strengthen social groups and individuals. Thus, the purpose of this study is to establish a situational diagnosis and support initiatives for PLHIV care, such as constructing and improving lines of care and other strategies.

The proposed objective was to characterize the spatial distribution of municipal PHC health institutions and other potential centers for the care of PLHIV.

METHODS

Type of study

This was an exploratory study on the spatial distribution of health institutions that make up the HCN and their possibility to intervene in the health needs of PLHIV, from the perspective of comprehensiveness.

Scenario

The study scenario was the municipality of São Paulo in its entirety, following information that characterize the Regional Health Administration (RHA).

Data collection

Data were collected from publicly accessible sources: Brazilian Institute of Geography and Statistics (IBGE), Department of Informatics of SUS (DATASUS), Ministry of Health (MH), State Health Departments (SHD) and City of São Paulo (CSP). The institutions were described based on the documented List of Establishments/Services of the Municipal Ministry of Health.11 The Reference Centers for Social Assistance (RCSA) and Specialized Reference Centers for Social Assistance (SRCSA) were included, given the importance of their involvement with the assistance of vulnerable populations.

Data were organized in an MS Excel spreadsheet and data collection was performed from April to June 2018.

Data analysis

For data analysis, georeferencing technique was used through the Batchgeo tool, which is free and freely accessible through the site https://pt.batchgeo.com, to characterize the distribution of institutions in the municipality.

The five topics advocated by the MH for elaborating the line of care for PLHIV1 were the basis for information organization, analysis and discussion of results.

According to the Ministry of Health, the care of PLHIV in Primary Care should consider: a) elaboration of a risk stratification model for the care of asymptomatic patients; b) qualification of professionals, contemplating different models of continuing education and exchanges with experienced professionals; c) offering technical support to professionals, interinstitutional articulation and enrollment; d) opportunity to perform CD4 and Viral Load exams; e) access to ARV therapy. The last two topics should address aspects related

to information confidentiality, the previous existence of these locations in the BHUs or the creation of new ones, provided that the sizing of the regions is done, in order to optimize resources and not create units that will be idle[1].

Ethical aspects

In the case of non-human research and because they are publicly accessible data sources, there was no need for approval by the Research Ethics Committee.

RESULTS

The Brazilian region with the highest number of AIDS cases recorded is the Southeastern Region, with 461,988 (52.3%) reports, of which more than half (265,689; 57.5%) are from the State of São Paulo. Then, it is followed by the Southern Region with 177,327 (20%) cases and the Northeastern Region with 136,290 (15.4%) cases. The Municipality of São Paulo, according to MH data, totaled 103,085 cases up to 2017. There is a divergence from the number presented by CSP, probably due to the source of data collection. For the analysis of the municipality data, this study used the values indicated by CSP[2].

The municipality of São Paulo occupies the first place in the national, state and regional ranking in relation to the general population. 2010 census data counted 11,253,503 people and the municipality also has the highest population density (7,398.26 inhabitants/Km2) in the country[12].

It is divided into 96 neighborhoods, organized into 26 Technical Supervisors of Health (THA) and distributed into six Regional Health Administrations (RHA)[11].

The most populous Regional Administration is the Southeastern, followed by the South, East, Northern, West and Center[13]. The population of the municipality, distributed in RHA and TSH is described in table 1.

Table 1 - Population residing in São Paulo city by Regional Health Administration and Technical Supervisors of Health. São Paulo, 2018.

Regional Health Administration	Technical Supervisor of Health (TSH)	População (%)
(RHA)	Santa Cecilia; Sé	431,106 (3.8%)
Center	Cidade Tiradentes; Ermelino Matarazzo; Guaianases; Itaim Paulista; Itaquera; São Mateus; São Miguel	2,380,783 (21.2%)
East	Casa Verde / Cachoeirinha; Freguesia / Brasilândia; Perus; Pirituba; Santana / Jaçanã; Vila Maria / Vila Guilherme;	2,214,654 (19.7%)
Northern	Butantã; Lapa / Pinheiros	1,023,486 (9.1%)
West	Ipiranga; Mooca / Aricanduva; Penha; Vila Mariana / Jabaquara; Vila Prudente / Sapopemba;	2,649,670 (23.5%)
Southeastern	Campo Limpo; Capela Do Socorro; M boi Mirim; Parelheiros; Santo Amaro / Cidade Ademar	2,553,804 (22.7%)
South		11,253,503 (100%)

Source: Demographic Census (IBGE), 2000 and 2010; TABNET available at: http://tabnet.saude.prefeitura.sp.gov.br/cgi/deftohtm3.exe?secretarias/saude/TABNET/POPIDADE/popidade.def

The city of São Paulo is mostly urban, with a small presence (28,362; 0.8% of the total) of rural households in the southern, eastern, Northern and Southeastern RHA. Almost all households have access to water supply, garbage collection, electricity, and sewage disposal is greater than 83% in RHA. Households predominate in all regions except the Midwestern RHA, where apartment housing comprises over 60% of households and the concentration of rooms or apartment houses represents 2.0% of households, the largest indicator in the city; followed by RHA South, with 1.3% of this type of housing. The highest ratios among residents per household are in Eastern RHA (3.42), Southern and Northern RHAs (3.29), followed by Southeastern RHA (3.0) and Midwestern RHA (2.63). The ratio of the city is 3.14[13].

Regarding access to goods and consumption, the Midwestern RHA presents the best results for proportion of households with durable goods, such as washing machine (87.8%), computer (76.9%) and personal car (65.3%). For these goods, the Eastern RHA has the worst results, reaching 43.4% of households with cars and 43.4% with computers. The Southern RHA presented the highest percentage of households (10.5%) with personal motorcycles[13].

The city of São Paulo presents unequal schooling indicators among the RHAs. For complete higher education, people aged 25 and over amount to 46.4% in Midwestern RHA and 8.0% in Eastern RHA. The proportion of the city is 22.2%. For the average completed level, people aged 18 or older from the RHAs maintained a proportion equivalent to that of the city (31.0%), ranging from 29.0% in the Midwestern RHA to 32.8% in the Northern RHA. Illiteracy among the elderly stands out in the Eastern (15.5%) and Southern (14.8%) RHAs[13].

The average monthly income is 4.4 minimum wages for formal workers, considered the best average in the country, state and metropolitan region. The GDP per capita is the best in the country, represented by the figure of R$ 54,357.81. Moreover, almost half of the population is employed and about 31% of the population has a monthly income per capita of up to ½ the minimum wage, explaining the economic inequality of the municipality[15], ratified in 2010 by the municipality's Gini Index of 0.6453[12]. Concerning traveling time to work, 35.1% of the employed persons in Eastern RHA take between one and two hours, followed by 30.9% of the Southern RHA people. For the residents of Midwestern RHA, 85.2% take five minutes to an hour to get to work[13].

The largest percentage of beneficiaries of income redistribution programs is in the Eastern and Southern RHAs. These also have the lowest percentages of retirees and pensioners (11.1% and 10.7%, respectively), and are the only RHAs with indicators below the city's (13.7%)[13]

Although it stands out positively in many respects, morbidity and mortality data present disparities in relation to the economic scenario. Infant mortality is still represented by two digits: 11.12 deaths per 1,000 live births, which corresponds to position 2,986 in the national ranking. Although 50.3% of public roads are urbanized and 92% of households have a sewage system, there are still 0.3 hospitalizations by diarrhea per one thousand inhabitants, giving Sao Paulo a position of 3,907 among Brazilian municipalities for this indicator[12].

Epidemiological data show that between 1980 and mid-2016, 90,618 AIDS cases were reported in the city, of which 41,950 (46.3%) died of AIDS and 2,983 (3.3%) died due to other causes or unknown causes. Until 2016, 45,685 (50.4%) notified people lived with AIDS in São Paulo. In the same period (1980-2016), 66,095 (72.9%) of the notifications were for males and 24,523 (27.1%) females. Regarding transmission, 18,309 (20.2%) notifications ignored the route of exposure, followed by transmission by sexual exposure among heterosexuals (33,166; 36.6%), homosexuals (11,138; 12.3%), injection-based drug users (13,206; 14.6%) and sexual exposure among bisexuals (6,181; 6.8%). Approximately 1,000 (1.1%) reported cases had a blood transfusion or vertical transmission as the transmission route. The age group most affected in the period was 30 to 34 years old at the time of diagnosis, accounting for 21.4% of the notifications. The population group aged 25 to 39 years totaled 52,044 (57.4%) notifications in the period[14].

The epidemiological situation in 2016 showed that the Southeastern RHA had the

highest number of PLHIV aged 13 and over (10,289; 22.5%), followed by Northern RHA (9,107; 19.9%), Eastern RHA (7,374; 16, 1%), Southern RHA (6,915; 15.1%), Central RHA (5,897; 12.9%) and finally Western RHA (3,678; 8.1%). About 5% of notifications were ignored[14].

In the document entitled List of Establishments/Services of the Municipal Secretary of Health, based on MH data, updated in May 2018 and available by CSP on the City Hall website, there are 817 services[11]. It is noted that the Administration that concentrates the largest number of resources is the Eastern and the most present resource in the municipality is the Basic Health Unit. For this study information regarding RCSA and SRCSA were added, considering the relevance of these services in the care of PLHIV. The distribution of institutions is presented in table 2.

Table 2 - Distribution of municipal health and social assistance services, by type and Regional Health Administration. São Paulo, 2018.

Regional Health Coordination	CENTER	EAST	NORTH	WEST	SOUTHEAST	SOUTH	Total
Institution Type							
AE					2		2
AMA	3	4	5	2	8	7	29
AMA ESP	1	2	1		2	2	8
AMA/BHU INTEGRADA		25	22	6	22	16	91
AMB ESP		2	4		2	3	11
APNC	1	4			1		6
ASSR		1					1
CPHC AD	2	6	4	2	7	4	25
CPHC Adulto	1	7	6	4	6	7	31
CPHC IJ	1	6	5	2	7	6	27
CCZ			1				1
CD					1	1	2
CECCO		5	7	2	5	5	24
CEO	1	7	6	2	8	7	31
CER	1	5	4	2	6	5	23
COE					1		1
CP					1		1
CR STI/AIDS			1		1		2
RHAT	1	1	1	1	1	1	6
CTA STI/AIDS	1	5	1		1	2	10
HD		3	2	1	4	5	15
HE					1		1
HM	2	4	4	2	6	3	21
LAB		1	3	1	2	1	8
NIR		1					1
NIR/AMA/BHU					1		1

to be continued...

... continuation table 2

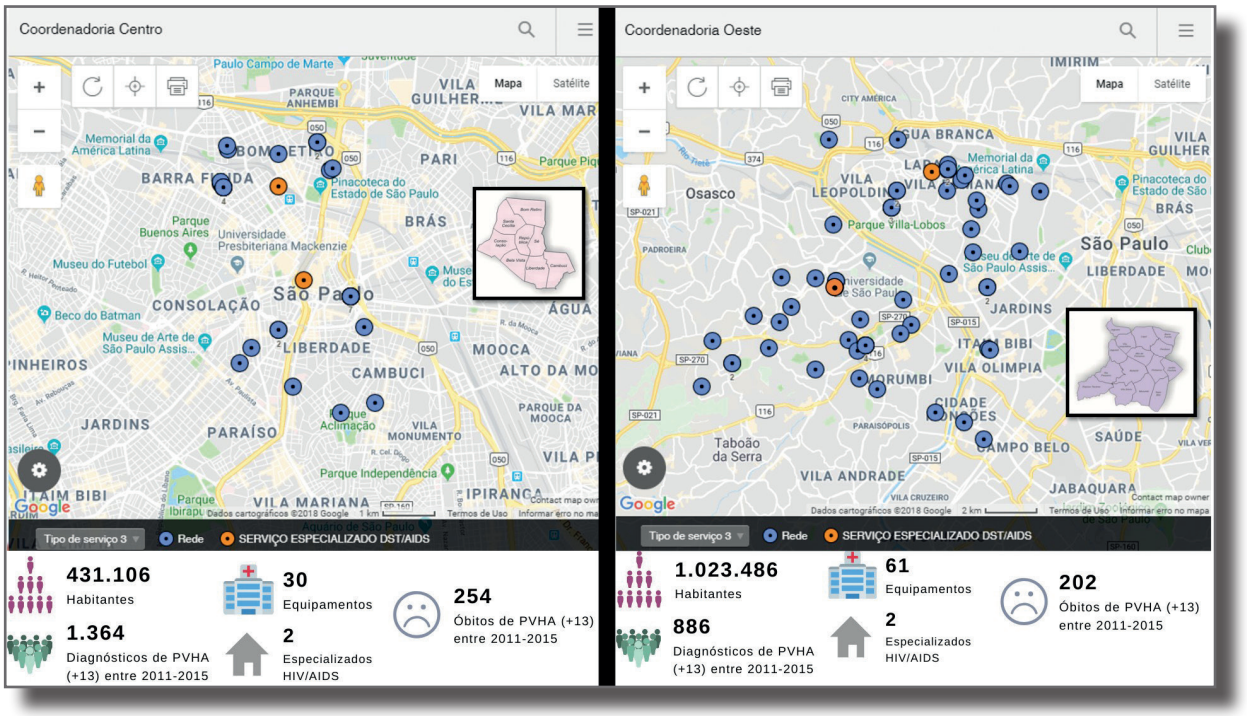
Regional Health Coordination	CENTER	EAST	NORTH	WEST	SOUTHEAST	SOUTH	Total
NIR/AMB ESP			1			1	2
NIR/BHU		2	3		1	1	7
NISA/AMB ESP			1		1	1	3
NISA/BHU		2	1				3
PA		3				1	4
PES				1			1
PSM	1	1	4	2	1	2	11
SCS STI/AIDs	1	2	1	2	4	3	13
BHU	8	90	70	24	72	108	372
UDI	1						1
UOM	1		1		1		3
UPA		1			2	5	8
URSI	1	2	2		2	3	10
RCSA	1	12	15	3	9	14	54
SRCSA	1	7	7	2	8	5	30
Grand total	30	211	183	61	197	219	901

Legend: AMB ESPEC: Specialized Outpatient Clinic; AMA: Outpatient Medical Assistance; AMA ESP: Specialized Ambulatory Health Care; APNC: Assistance in Natural and Complementary Practices; ASSR: Attention to Sexual and Reproductive Health; CPHC AD: Alcohol and Drugs Psychosocial Care Center; CPHC Adult: Adult Psychosocial Care Center; CPHC IJ: Child and Youth Psychosocial Care Center; CECCO: Coexistence and Cooperative Center; CEO: Center for Dental Specialties; CER: Specialized Center for Rehabilitation; CP: Birthing House; CR STI/AIDS: STI/AIDS Reference Center; RHAT: Occupational Health Reference Center; CTA STI/AIDS: Center for STI/AIDS Counseling and Testing; HD: Daytime Hospital; HE: State Hospital; HM: Municipal Hospital; LAB: Laboratory; NIR: Integrated Rehabilitation Center; NISA: Integrated Hearing Health Center; PA: Emergency Room; PES: Economic Solidarity Reference Point; PSM: Municipal First Aid; SCS STI/AIDS: Specialized Care Service for STI/AIDS; BHU: Basic Health Unit; UOM: Mobile Dental Unit; IDU: Diagnostic Imaging Unit; UPA: Emergency Care Unit; URSI: Elderly Health Reference Center;

Source: List of Establishments/Services of the Municipal Secretary of Health; the Municipal Secretary of Health of São Paulo and the page of the Municipal Secretary of Assistance and Social Development, available at: https://www.prefeitura.sp.gov.br/cidade/secretarias/assistencia_social/secretaria/a_secretaria/index.php? p = 1856

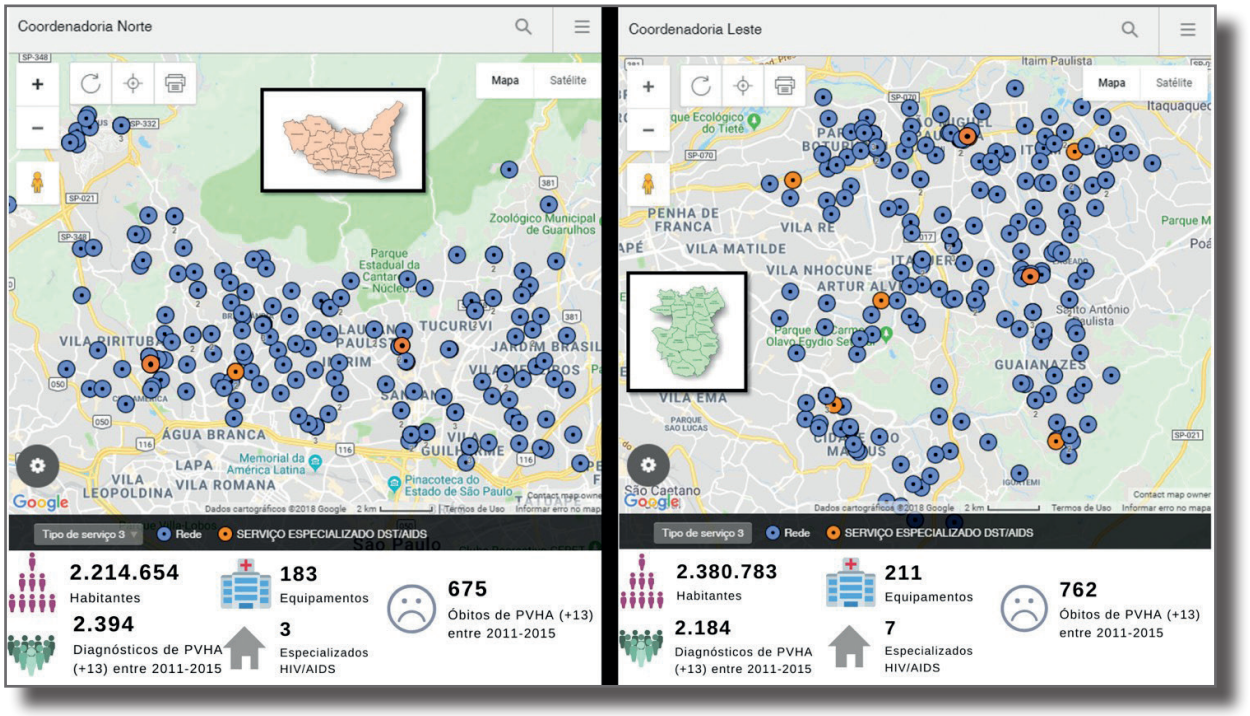
The city's health services are distributed throughout the territory. The following figures show the spatial distribution of health and social care services compared to specialized services for PLHIV care in the five RHAs of the municipality, as well as population data and notifications recorded by the CSP in a five-year time frame (2011-2015).

The Central and Western RHA had the lowest number of diagnoses of HIV infections and AIDS-related deaths in the five-year interval between 2011 and 2015. These regions have the smallest populations in the city and the smallest number of facilities distributed in the territory; each with two facilities specializing in HIV/AIDS infections. In the same period, the Central and Western RHAs presented the lowest proportions, 18 and 22 deaths for every 100 reports of diagnosis, respectively.



Source: Batchgeo/Google Maps (maps); Canva (infographic) DATASUS (data); List of Establishments/Services of the Municipal Secretary of Health; Municipal Secretary of Health of São Paulo.

Figure 1 - Infographic on the spatial distribution of health and social care institutions in the Central and Western RHAs of São Paulo, population data and data on notifications of HIV/AIDS infections from 2011 to 2015. São Paulo, 2018.



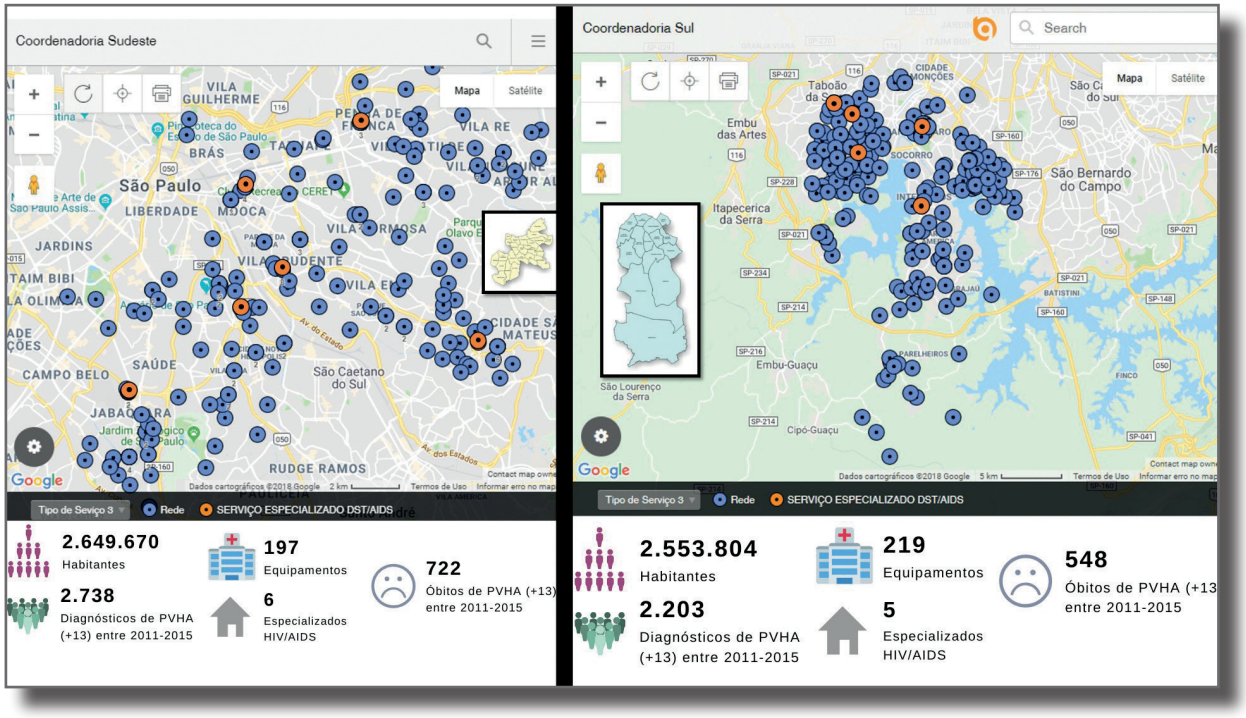
Fonte: Batchgeo/GoogleMaps (mapas); Canvas (infográfico)DATASUS (dados); Relação dos Estabelecimentos/Serviços da Secretaria Municipal de Saúde; Secretaria Municipal de Saúde de São Paulo;

Figure 2 - Infographic on the spatial distribution of health and social care institutions in the Northern and Eastern RHAs of São Paulo, population data and data on notifications of HIV/AIDS infections from 2011 to 2015. São Paulo, 2018.

The Northern RHA was in a median position in relation to the number of diagnoses of HIV/AIDS infections, health resources and deaths, in addition to the second position in the list of deaths by diagnosis. The Region has three specialized resources for the care of PLHIV.

The Eastern RHA has the third largest population in the municipality, the fourth largest region for reported diagnoses, the second largest number of institutions, and is the region with the most specialized services for PLHIV. Still, it has a ratio of 34 deaths per 100 reports of HIV/AIDS infections; almost 50% more than the Western RHA in the same period from 2011 to 2015.

The Southeastern and Southern RHA present the largest populations of the municipality and the Southeastern RHA has the highest number of reports of diagnoses of HIV/AIDS infections. Both have a significant number of institutions and specialized services and have a small difference in the proportion, 26 and 24 deaths per 100 diagnostic notifications, respectively, from 2011 to 2015.



Source: Batchgeo/Google Maps (maps); Canva (infographic) DATASUS (data); List of Establishments/Services of the Municipal Secretary of Health; Municipal Secretary of Health of São Paulo.

Figure 3 - Infographic on the spatial distribution of health and social care institutions in the Southeastern and Southern RHAs of São Paulo, population data and data on notifications of HIV/AIDS infections from 2011 to 2015. São Paulo, 2018.

Areas with higher concentrations of resources can be observed, as well as the location of specialized services in the most central areas of RHAs and the city. The lack of specialized services is highlighted in the lower portion of Southern RHA, near the Grajaú, Parelheiros and Marsilac neighborhoods and in the Northernmost portion of RHA North, near the Serra region, in the Perus, Jaraguá, Brasilândia, Cachoeirinha, Mandaqui and Tremembé neighborhoods.

According to 2009 data available on the CSP website, the services offered by the São Paulo BHU included actions such as consultations,

home visits, oral health, vaccination, collection of laboratory tests, dressings, health surveillance, social promotion and protection, chronic patient follow-up (hypertensive, diabetic and others), prenatal and postpartum, leprosy, tuberculosis, sexually transmitted diseases and HIV-AIDS. For immediate care of spontaneous demand, the municipality has Outpatient Medical Assistance (AMA). In addition to the activities developed at the BHU, other technical areas comprise the primary care of the municipality, such as the Street Clinic, Integrative and complementary practices, Nutrition and Healthy Eating, Health of the Indigenous population, LGBTT, black, people in situations of violence, among others. Some programs are developed within the scope of Primary Care, among which the Health at School Program, Better at Home and Health Academy stand out[15].

When comparing the resident population and number of BHU, the Central RHA has an approximate coverage of 53,000 inhabitants/BHU, followed by the Western RHA (34 thousand inhabitants/BHU), Southeastern RHA (27 thousand inhabitants/BHU), Northern RHA (23 thousand inhabitants/BHU), and both Eastern and Southern RHAs with 20 thousand inhabitants/BHU each.

The distribution of PLHIV among the available SCS in the municipality's RHAs, the Northern RHA displayed the largest contingent (798 PLHIV/SCS), followed by the Central RHA (682 PLHIV/SCS), Southeastern RHA (456 PLHIV/SCS), Western RHA (443 PLHIV/SCS), Southern RHA (440 PLHIV/SCS) and Eastern RHA (312 PLHIV/SCS).

The ratio between PLHIV and BHU of the Regions highlights Central RHA's coverage with 170 PLHIV for each BHU, while the others have a much smaller number; such as Western RHA with 123 PLHIV/BHU, followed by Southeastern RHA (109 PLHIV/BHU), Northern RHA (99 PLHIV/BHU), Eastern RHA (64 PLHIV/BHU) and Southern RHA (56 PLHIV/BHU).

DISCUSSION

From a comprehensive perspective, prevention of HIV/AIDS infections establishes a combination of different approaches and levels, seeking to respond to the specific needs of vulnerable groups, reducing the gaps that classical methodologies were unable to fill. It is worth mentioning the recommendation focusing attention on groups of greater vulnerability, such as key populations and priority populations, identified in each territory. In this sense, biomedical, behavioral and structural actions are recommended, as well as individual and collective actions[1].

PHC's role, according to national guidelines, is to order health care, sharing its actions with local networks. Based on a situational diagnosis, PHC should guarantee the population's access to prevention, diagnosis and management of HIV/AIDS infections[1].

Integrality encompasses three dimensions, namely: health professional practices and attitudes, service organization and social policies and programs. These dimensions articulate the knowledge and practices of professionals, in order to transform hegemonic and vertical health practices into practices supported by public policies formulated in response to health needs, which are met by the expanded, interdisciplinary and integrated clinics in different healthcare sites organized into a network[16].

Among the points recommended for the decentralization of care by PHC are risk stratification and the follow-up of asymptomatic patients, opportunities to perform examinations (CD4 and Viral Load) and access to drug dispensations by the BHU or in strategically installed locations, given the optimal local demand[1].

From the point of view of spatial distribution,

the results show the city of São Paulo's potential for decentralizing the care for PLHIV. There are institutions capable of performing care actions of different complexities and natures, throughout the city.

The characteristics presented in the results regarding the Eastern RHA showed the vulnerabilities of the resident population. The sociodemographic characteristics showed low indicators of schooling and income and the longest daily commute time of workers. A study of 1,208 young Brazilians between 18 and 29 years of age confirmed education as a significant aspect for vulnerability to HIV/AIDS infections.17 Regarding the coverage of HIV infections, the Eastern RHA has the highest number of SCS in the municipality.

Although Eastern RHA has the highest number of SCS and the best proportion between population and BHU, it is not the region with the most HIV infection diagnoses and has the highest proportion between number of diagnoses and deaths from HIV/AIDS infections. However, it is noteworthy that the number of BHUs would enable greater coverage of PLHIV (64 PLHIV/BHU) and their access to therapeutic resources.

With a view to comprehensiveness in health services, a study conducted in the city of Porto Alegre on the process of decentralization and care in HIV/AIDS infections for PHC identified positive aspects of patient care by PHC teams, such as proximity, easy access to BHU and culture change; all represented by the insertion of counseling in the community. On the other hand, the embarrassment given the proximity of the health unit to the patient's residence and the sharing of the same space with people they know led to a paradoxical discussion of the territory, constituting an important challenge in the implementation of the decentralization proposal[7].

The access of PLHIV to PHC is done in two different situations, either when the individual knows the diagnosis and seeks help for health demands that do not refer directly to HIV/AIDS infections, or for the diagnosis of the infection through the rapid test. Therefore, the need to promote a relationship of bond and trust is emphasized, where the Basic Health Unit can be seen as a gateway to issues related to HIV/AIDS infections, capable of fully and longitudinally meeting the needs of PLHIV[18].

From the professional's perspective, the disclosure of the diagnosis implies a moment of anxiety for both parties. This situation is attributed to the stigma related to the disease, which throughout its historical trajectory was permeated by stereotyped characteristics and social representations, which denote the need for professional preparation[18].

Preparing PC professionals operating in different education models, such as face-to-face or non-face-to-face, continuing education with experienced professionals in the care of PLHIV and through partnerships with local educational institutions, constitute one of the pillars for the implementation of management of HIV infection in PHC. The preparation must address the stigmatizing issues, the demographic diversity of each region and the respect for the particularities of each phase of life according to the social categories to which PLHIV belong.

One of the main challenges that challenges the decentralization process begins with the rapid testing in the BHUs involving the stigma and discrimination of professionals and the users of the services themselves, without them realizing it this way. Socio-historical knowledge of the epidemic and health promotion actions are ways to prevent Primary Care from consolidating itself as a stimulus for stigmas[7].

Another important point is the availability of CD4 and Viral Load (VC) exams, as well as rapid tests for HIV diagnosis. These are strategies for preventing transmission and reducing morbidity and mortality, which, linked to treatment adherence, has contributed to the quality of life of PLHIV[1].

Despite being cited as implementation measures for the management of HIV infection in PHC, a study conducted in the state of São Paulo and another in Pernambuco, both in 2016, point out weaknesses in performing rapid tests. They are related to delivery logistics, where

the main reasons for not conducting Rapid Diagnostic Tests (RDT) were the lacks of inputs and materials, physical structure to perform the tests, the lacks of human resources, and trained professionals available for this activity, pre- and post-test counseling, opportunities for improvements in professional training and in the execution of educational activities were also highlighted[19].

In this same context, enabling access to antiretrovirals, to promote the management of HIV/AIDS infections in PHC, implies the reorganization of the Basic Health Units or the creation of new drug dispensing centers. The dispensation of antiretrovirals, if necessary, is given through the Drug Dispensing Units (DDU), whose control takes place through the Drug Request Form and the Logistic Drug Control System (SICLOM). Another important point is the relationship of trust, empathy and confidentiality between the professional and user. Receptiveness is an important tool in the process of adherence to treatment, and research shows that PLHIV seek care far from home precisely for fear of having the diagnosis revealed[7].

Finally, the present study points to the potential use of Geographic Information Systems (GIS) to monitor the living conditions and health of the population, whether related to a specific problem or characteristics of a social group. The possibility of mapping and verifying the spatial relationship between diseases and the characteristics of the territory may reveal important epidemiological characteristics in the elaboration of health prevention, promotion and recovery strategies, as well as intersectoral and expanded actions[20]. Given the availability of digital tools for free use, it is emphasized that GIS be possibly used in the scope of the BHU, enhancing the planning and actions of health teams.

The study's limitations include the use of a geoprocessing tool with limited resources and the analysis of the distribution of health services only. Continuity studies are necessary to compare the distribution of PLHIV in the territory and their proximity to the institutions.

CONCLUSION

It is concluded that the spatial distribution of municipal health institutions favors the decentralization process, aiming at the integrality and longitudinality of care. However, cultural concepts need to be reconstructed that break with the stigmatizing issues that make it difficult for PLHIV to accept follow-up at BHU near their residence. This incongruent relationship between space and PLHIV denotes the need to invest sharply in professional qualification, physical restructuring and reception of PLHIV.

The needs faced today by PLHIV result from a degenerated cultural context due to the unknowns of the beginning of the epidemic. However, technological advances allow health resources to advance continuously through investments in hard technologies, but especially in light technologies that allow us to enjoy the spatial distribution of institutions.

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