

Specialized care and health transport from a Health Care Network integration perspective

Patty Fidelis de Almeida (<https://orcid.org/0000-0003-1676-3574>)¹

Kamilla Santos Silva (<https://orcid.org/0000-0002-3324-9254>)²

Aylene Bousquat (<https://orcid.org/0000-0003-2701-1570>)³

Abstract *The aim of this study was to analyze the organization and provision of specialized care (SC) and health transport in regional polyclinics in the state of Bahia, Brazil. We conducted a qualitative exploratory single case study of a polyclinic based on semi-structured interviews with key informants in municipal and state health services. We sought to identify elements that characterize network-based models of SC. A number of advances were identified, including: an increase in the provision of SC and the scope and quality of services; effective retention of health professionals; provision of health transport; monitoring of SC; and improvements in the regulation of access to care through the use of computerized systems. The following challenges were observed: tailoring SC planning to regional health needs; the promotion of care coordination by Primary Health Care (PHC); the development of strategies to improve communication between SC and PHC professionals; institutionalization of counter-referral; engagement between the polyclinic and spaces for citizen participation; and fostering matrix support, permanent education, teaching-service integration, and research. Despite the intrinsic challenges of SC and the need to strengthen the central role of PHC, the regional polyclinic arrangement is better suited to the integration of the health care networks.*

Key words *Secondary Care, Regional Health Planning, Health Service Integration, Health Consortiums*

¹ Instituto de Saúde Coletiva, Universidade Federal Fluminense. R. Marquês de Paraná 303, 3º andar, anexo ao Hospital Universitário Antônio Pedro (Huap), Centro. 24220-000 Niterói RJ Brasil. pattyfidelis@id.uff.br

² Instituto Multidisciplinar em Saúde, Universidade Federal da Bahia. Vitória da Conquista BA Brasil.

³ Faculdade de Saúde Pública, Universidade de São Paulo. São Paulo SP Brasil.

Introduction

Barriers to specialized care (SC) are general and multifactorial, with consequences for timely care, outcomes, and health equity in both urban and rural settings^{1,2}. Increasing the “value” of health systems entails, among other things, improving quality and reducing unnecessary hospitalizations, tests, and procedures by repositioning SC and creating an interface between SC and primary health care (PHC) services³.

In Brazil, a widely used definition of SC is regionalized care involving actions, practices and services that require hospital medical equipment, specialists, and greater use of technology, ensuring scale and quality⁴. In Brazil’s public health system, the *Sistema Único de Saúde* (SUS) or Unified Health System, SC is delivered through an array of facilities, each with a different type of organization and scope, including specialist polyclinics, hospital outpatient clinics, regional referral centers, and autonomous services/clinics linked to the private sector. In other countries, specialist outpatient care is often provided in local health units located in hospitals (Denmark, Canada, Switzerland, Italy) or in private clinics with self-employed specialists⁵.

Combining regionalization and the provision of accessible SC in a country of continental proportions like Brazil is no trivial task. Specialist outpatient and hospital services in conjunction with PHC provide a minimum scope of actions to ensure the delivery of comprehensive care through the SUS. However, SC services are concentrated in a limited number of regions⁶. One of the results of regionalization has been a reduction in access to care and diagnostic services in rural areas, illustrated by the centralization of Canadian SC in small hospitals in urban centers to achieve efficiency gains and scale⁷.

In Brazil, private sector interest and interference in the concentration of SC services in larger urban centers may be one of the explanations for the absence of an organizational model of SC in the SUS⁸. The lack of such a model and the insufficiency and concentration of SC services in larger urban centers compromise the delivery of comprehensive care, especially for people living in small towns and rural areas, often requiring patients to travel unacceptably long distances to access services⁹. Studies have shown that the availability of means of transport is often just as critical as the provision of health services^{10,11}. Transport systems therefore cut across health care networks (HCNs) and are essential for en-

abling patient flows and counter-flows, constituting a key logistical resource for mediating access to SC^{12,13}.

Mendes¹² suggests that PHC and SC should be combined into a single micro clinical system. By making PHC the locus of care, it is possible to access specialist services underpinned by a clinical approach that is committed to people, without exposing patients to unnecessary procedures¹⁴. Hence, it is not just about increasing the provision of SC, but integrating care into the HCN model, a topic that has received little attention from researchers and the country’s health policies^{15,16}.

This article analyzes the organization and provision of SC (appointments and tests) and health transport by regional polyclinics in the state of Bahia, which fall within the sphere of intergovernmental health consortiums (IHCs). Studies suggest that consortium arrangements enable better organization of the demand for and delivery of specialist services, especially in small municipalities¹⁷, and foster intergovernmental cooperation^{18,19}. A prominent example is the experience of the state of Ceará, a pioneer in the implementation of vertical consortiums aimed at expanding and “interiorizing” SC services supported by transport programs²⁰. The identification of gaps in SC spurred the creation of polyclinics in the state of Bahia²¹. In addition to exploring the contribution polyclinics make to improving access to specialist services, this study aimed to respond the following question: Is the regional polyclinic model better suited to the delivery of SC in regionalized health networks, particularly in regions with a considerable number of small municipalities?

Methodology

Study type and setting

We conducted a qualitative exploratory single case study based on the intentional selection of experiences of the Vitória da Conquista/Itapetinga regional polyclinic. The implementation of IHCs follows the same approach across different regions, meaning that cases are broadly similar. There has been a rapid expansion of IHCs in Bahia, with 23 IHCs and 21 polyclinics in September 2021²¹. At the time of data collection, the Interfederal Health Consortium of the Vitória da Conquista and Itapetinga Region (IHCVITA) was made up of 31 municipalities located in three health regions (Vitória da Conquista, Itapetinga,

and Brumado) belonging to the southeast macroregion, with a little over 800,000 inhabitants. Twenty-one of the 31 municipalities are adjacent to remote rural areas.

Information sources and research subjects

The primary information source were 19 semi-structured interviews with state and municipal health managers and coordinators of the IHCVITA and polyclinic. The participants were intentionally selected to include subjects directly involved in the functioning and management of the IHC/polyclinic. We also interviewed civil society representatives, appointment booking team members or “regulators”, members of the municipal legislature, and mayors, who are key informants for understanding the political dimensions of the functioning of the health facility. We visited the polyclinic, five municipalities, and the state capital in May and June 2021 to carry out face-to-face interviews at the interviewees’ workplace, resulting in 761 minutes of audio recordings. Chart 1 presents the profile of the interviewees, whose positions were described generically to protect their identity. It is worth highlighting that most of the interviewees had a background in health care and post-graduate qualifications in public health, constituting a group of actors with relevant experience in the topic addressed by this study.

Supplementary documents and regulations concerning the functioning of IHCs and polyclinics were also analyzed.

Data analysis

We performed a content analysis of the material comprising the following stages: pre-analysis involving detailed reading and re-reading of the interview transcripts and identification of relevant documents guided by the research question; exploration of empirical material guided by the thematic dimensions; and interpretation of the findings anchored in the participants’ perceptions, thematic dimensions, and study components²². We sought to ensure the quality and validity of the results through confrontation and the complementarity of the various experiences of the interviewees and official documents.

The framework used to analyze the organization and provision of SC and health transport initially drew on the dimensions of a model called “points of secondary outpatient care” by Mendes¹² (the “PASA Model”, in Mendes¹⁶). The design recon-

figures SC, making it part of the HCN, in contrast to the fragmented approach which is centered around “medical specialty centers”¹². This involves the following: needs-based planning; communication between points of care and between PHC and SC professionals; centrality of PHC; integrated protocols and patient records; matrix care, permanent education, and SC research functions. Although, a priori, these dimensions provided the basis for the interview guides and informed the thematic analysis, new components were incorporated based on the empirical evidence, primarily to address the regional nature of the experience. Chart 2 presents the framework used to analyze and present the results. Without exhausting all possibilities, the framework also shows the dimensions and components of a SC model that is more consistent with the principles of regionalization and integration into the HCN.

The study protocol was approved by the Fluminense Federal University School of Medicine’s research ethics committee (CASC 40092220.9.0000.5243, approval number No. 4.574.166).

Results

SC and health transport planning based on regional health needs: centralization versus locoregional demands

The IHCVITA’s Memorandum and Articles of Association contains a wide range of actions, including drug procurement and dental specialty centers²¹. At the time of the study, the polyclinic provided specialist appointments and tests and health transport, the latter via 17 minibuses and four vans. Two legal instruments govern relations between the municipal health authorities and the IHCVITA/polyclinic: a program contract setting out the procedures to be provided by the polyclinic; and an apportionment agreement, which establishes the share of funding apportioned to the state and municipal governments (40% and 60%, respectively, without any contribution from the federal government)²¹.

The suite of services offered by polyclinics set out in program contracts are defined by the state government according to the number of consortium member municipalities and catchment population. Specialist appointment and test quotas and transport needs are calculated based on the total population of each municipality. The difference between the 2010 census population

Chart 1. Characteristics of the research participants. Bahia, Brazil, 2021.

Interviewee	Length of time in position	Sex	Academic background/ education level	Postgraduate qualification	Previous health experience
Regulator Vitória da Conquista	9 months	F	Nursing	PhD in Public Health	Yes
City councilor Vitória da Conquista 1	5 months	M	Law	Master's degree in Memory, Language and Society PhD student	No
City councilor Vitória da Conquista 2	4 years 5 months	F	Nursing/ Law	Master's degree in Public Health	Yes
Vitória da Conquista 1	14 months	F	Nursing	Obstetrics/Worker's Health/ Health Surveillance Management	Yes
Civil society representative	2 years	M	Psychology	Specialization in Human Rights	Yes
IHCVITA Management	2 years	F	Nursing/ degree in Literature	Specialization in Clinical Management	Yes
Polyclinic Management	2 years	F	Pharmacy	Health Systems Management, Micropolitics	Yes
Polyclinic Technical Advisor 1	20 months	F	Nursing	Multiprofessional Residency, Planning and Management	Yes
Polyclinics Technical Advisor 2	6 months	M	Nursing/ Medicine	Specialization in Public Health, Health Management	Yes
Belo Campo 1	4 years 5 months	M	Nursing	Specialization in Health Management	Yes
Belo Campo 2	4 years 5 months	M	Administration	Planning and Management	Yes
Planalto 1	5 months	M	History	-	No
Planalto 2	5 months	M	Junior high	-	Yes
Poçoões 1	3 years and 10 months	M	Junior high	-	Yes
Poçoões 2	5 months	F	Junior high	-	No
Bom Jesus da Serra 1	5 months	M	Junior high	-	Yes
Barra do Choça 1	5 months	F	Administration/ Nursing/ Mathematics	Personnel management/ Mathematics/Intensive Care/ Auditing	Yes
Technical advisor SESAB 1	4 years	M	Law	Specialization in Public Law and Social Security	No
Technical advisor SES-AB 2	23	M	Accounting	Specialization in Health Economics	No

Source: Authors based on the interviews.

and current population according to primary care records of patients attending health services adversely affected some municipalities, having implications for planning and funding.

There were discrepancies between the interviewees' assessment of the possibility of adapting the suite of services to meet locoregional needs and the dynamics of the functioning of the polyclinic. It was highlighted that the services did not always meet needs, mainly because some municipal health authorities provide SC procedures at

local level. The Assembly of Mayors (General Assembly), the IHC decision-making body, has the power to make changes to the suite of services. The IHC used these powers to include electro-neuromyography in the suite of services. However, the decision-making process involved a series of discussions, agreements, and consensus-seeking between consortium members.

The program contract sets certain goals that are inconsistent with the capacity of the polyclinic, such as unrealistic daily appointment tar-

Chart 2. Framework for analyzing the organization and provision of specialized care and health transport from the regional health care network perspective, 2021.

Dimension	Components
Planning of SC and health transport provision based on regional health needs	<ul style="list-style-type: none"> • Integrated regional planning of SC provision based on health needs and care parameters in the municipalities and region. • Overall tripartite funding. • Decision-making spaces across municipalities, state and SC providers. • Goal-setting and monitoring of SC provision. • Strategies to attract and retain SC professionals.
Health transport	<ul style="list-style-type: none"> • Health transport SC services. • Prior booking of transport. • Adapted transport. • Vehicle maintenance and safety.
Regulated access and care coordination by PHC	<ul style="list-style-type: none"> • Access exclusively via referral by municipal PHC services. • Computerized regulation system. • Appointments and procedures schedule is made available in advance and reallocation/rebooking of slots is possible. • Referral quality analysis. • Regular counter-referral to PHC. • PHC and SC communication tools. • Actions to enhance referral by PHC. • Mutual accommodation strategies.
Integration with other points of care and professionals in the regional HCN	<ul style="list-style-type: none"> • Communication between SC and other health services. • <i>Telessaúde</i>.
Interprofessional care in SC	<ul style="list-style-type: none"> • Interprofessional care in SC. • Joint treatment between doctors and other non-medical specialists in SC.
Sharing of electronic patient records, clinical protocols, and access to SC	<ul style="list-style-type: none"> • Clinical protocols for SC. • Lines of care shared between PHC and SC. • SC access protocols. • Computerized patient records in SC. • Computerized patient records shared between SC and PHC.
Engagement between SC services and spaces for citizen participation	<ul style="list-style-type: none"> • Strategies to promote engagement with spaces for citizen participation. • Engagement with the local community.
The role of matrix support, permanent education, teaching-service integration, and SC research	<ul style="list-style-type: none"> • Matrix support strategies (discussion of clinical cases, interprofessional consultations, site visits to municipalities) developed in conjunction with municipal health managers/professionals. • Part of working hours set aside for SC professional permanent education. • Permanent education for municipal health staff. • Center for interns and undergraduate and postgraduate student training. • Research. • Monitoring of patient satisfaction.

Source: Authors based on Mendes^{12,16} and analysis of the interviews.

gets for some types of procedures. Appointment availability also varied depending on type of day (business day, public holidays, etc.) and staff vacations and medical leave. It was mentioned that these difficulties were not readily acknowledge by the municipal health authorities. In 2020, some care services were interrupted or reduced due to the COVID-19 pandemic, generating tension

between managers, who argued that the services continued to receive funding. The managers understood that the polyclinic played the role of a SC provider from which the municipal government purchased services.

However, for procedures with limited availability, the consortium is seen as the only means of providing SC in these health regions, as due to

low demand local health authorities are unable to contract certain procedures and professionals on their own, meaning that a certain degree of scale is necessary.

Polyclinic staff are employed on a permanent basis by IHCVITA under the Consolidated Labor Laws regime. The interviewees reported that at the time of the study the clinic had a stable workforce. Initially, several doctors left the clinic because they were required to work the stipulated working hours and clock in using an electronic clocking-in system.

Job-sharing was introduced to ensure the provision of certain specialist services. However, each professional is still required to carry out a set number of procedures to meet the quotas and targets set out in the program contract. The fact that Vitória da Conquista is a regional health training hub makes it easier to find qualified staff.

There was no consensus between local health managers and mayors regarding who was the main provider of SC, despite it being frequently mentioned that the services of the polyclinic were always the first to be deployed. Especially in small municipalities, the demand for SC remains high and dependent on the agreed integrated schedule of municipal services and the accreditation of private providers using local government resources, sometimes overshooting the local health budget and jeopardizing other budget needs.

Efforts, which are still ongoing, were made to increase the provision of imaging tests to meet the very high demand for this diagnostic tool and task forces were set up to clear waiting list backlogs caused by the pandemic.

Health transport: removing barriers to access to SC

The vehicles were purchased by the state government and fuel, maintenance and driver recruitment is the responsibility of the IHCVITA. The adapted minibuses are equipped with Wi-Fi and air-conditioning. As some of the 21 vehicles are shared and the routes taken were designed by the regional health centers, IHCVITA, and city council departments of health (DoH).

Each municipal government organizes its own transport logistics internally to ensure, for example, that patients living in rural areas are able to get to the pick-up points. Due to long travel times from some municipalities, the need for facility modifications was identified to create a more comfortable and welcoming environment.

It was mentioned that the provision of health transport by IHCVITA has reduced political interference in the intermediation of this key resource for accessing SC.

Regulated access and care coordination by PHC: challenges for managing demand for care and fulfilling PHC's central role in health networks

Service scheduling is decentralized to municipal level. Referrals to the polyclinic made by PHC services (the large majority) or other professionals from the local network are scheduled using a computerized integrated management system called SIGES. In addition to appointments and tests, the system is also used to schedule health transport and clinical information. The most common type of patient flow are patients presenting referral request at centers. Follow-up appointments are scheduled by a member of the appointment booking team or "regulator" or at home visits from community health workers from PHC teams.

The polyclinic does not perform slot reservation to regulate internal patient flow. Cases requiring timely complementary treatment must be communicated to the municipal health authority to receive authorization to schedule a new appointment in the SIGES, even when rescheduling medical appointments or creating extra slots.

The appointments schedule is made available on a monthly basis. Some procedures offered by the polyclinic also provided by municipal services are sometimes not used (not scheduled). These procedures can be allocated for "re-provision", a mechanism through which procedures are made available to the pool of municipalities after communication between DoHs using WhatsApp. In addition to daily re-provision, some unscheduled procedures are made available in the SIGES on a monthly basis.

Different municipalities are permitted to exchange services for urgent cases, which are agreed between managers and formally referred to the polyclinic. The SIGES also allows appointments to be cancelled if the patient cancels. Informal communication using WhatsApp groups plays an important role in optimizing the scheduling of procedures and promoting solidarity among the group, although there is competition for vacant re-provision slots, whose use depends on the agility of the local regulator, internet, and the feasibility of ensuring patient attendance. Overall, interviewees reported that patient non-atten-

dance was low (around 10%), with differences in rates between municipalities.

Some interviewees suggested that, as in the case of transport, patient flow regulation and the sporadic procurement of procedures from private services minimized political interference in access to SC. However, the population continued to contact mayors, DoHs, local health committee members, and city councilors to attempt to get access to SC.

It was repeatedly mentioned that overcoming “informal requests” for referral to SC services was a major challenge. There was a consensus that referral regulations need to be improved, including the development of protocols and mechanisms to promote personal contact between SC and PHC professionals. The improvement of local referral processes is the responsibility of the respective municipal health authorities. Interviewees recognized that doctors are often pressured by patients to request appointments and tests. In such cases, prioritization should be performed by patient flow regulators, who play a key role.

It is possible to print clinical records using SIGES for follow-up in PHC after specialist appointments where the request is presented by the patient. This is not a mandatory patient flow routine and records are printed by the specialists as and when necessary. In addition to referral quality, counter-referral is also a critical bottleneck, as many specialists take a traditional outpatient care approach.

Doctor turnover in municipal health services mean that clinical staff must often start from scratch to understand polyclinic patient flows and care profiles. Turnover, which increased with the dismantling of the More Doctors Program, has also weakened *micro-regulatory processes* and the coordination of care by PHC.

Communication strategies to raise awareness about polyclinic functions and patient flows involving PHC professionals, for example visits to present the service to DoHs and mayors, were not implemented. There was also a perception that some polyclinic staff, especially specialists who are more likely to use hard technologies, had not grasped how the HCN functions, the need for communication between points of care, and the importance of interprofessional collaboration in the polyclinic.

Need for integration with other points of care and professionals in the regional HCN

The polyclinic does not make referrals to other points of care in the HCN nor perform internal scheduling (except appointments to see non-medical staff). The municipal health authority of origin is responsible for follow-up in PHC, delivering tests, scheduling appointments in other services, and rescheduling appointments at the polyclinic.

In the case of cancer diagnosis and other more serious conditions, the polyclinic’s social worker performs regular follow-ups in conjunction with the municipal health authority with a view to reinforcing the need for and ensuring timely and continuing treatment. This initiative, “Pathways for Care”²³, is led by the social worker responsible for welcoming patients, informing the municipality health authority of the origin of the diagnosis, and telling the family. In cases of cancer diagnosis at the polyclinic, the information is recorded in the SIGES and patients are monitored until they are admitted to high-complexity cancer care centers to initiate treatment²³.

The polyclinic uses a telemedicine system for issuing imaging test reports under contract to a private company.

The incipient nature of multiprofessional care in SC services

In addition to specialists, each polyclinic care team has nurses, a psychologist, nutritionist, social worker, and pharmacist to tend to internal referrals, based on the needs identified by the team’s doctors. Joint actions and interprofessional collaboration are still limited in the polyclinic.

Sharing of electronic patient records, clinical protocols, and access to SC: gaps in the integration of care

In addition to the regulation of patient flow, SIGES records clinical data, prescriptions, and the need for a follow-up appointment at the polyclinic. The system is not shared with PHC services.

Clinical protocols are not shared between the polyclinic and PHC services. However, the Bahia State Department of Health (SESAB) developed the “Manual for Accessing Regional Polyclinic Diagnostic and Treatment Support Services”²⁴ for PHC professionals and other requesters in municipalities. This comprehensive document – 156 pages – presents instructions on patient flows

and counterflows, clinical indications for procedures provided by the polyclinic, the requesting professionals, and guidance on test preparation²⁴. The interviewees mentioned that the manual needs updating.

Urgent need for engagement between SC services and spaces for citizen participation

The interviewees suggested that strengthening public participation through spaces such as local health committee is critical to maintaining the policy. However, initiatives to broaden engagement between the polyclinic and spaces for citizen participation were not identified, confirming the perception that there is a lack of dialogue with the local community to improve understanding about the services offered and the role of the facility in the HCN.

The role of matrix support, permanent education, teaching-service integration, and SC research: beyond demand for care

The development of matrix support strategies by polyclinic staff was not identified.

Staff working hours do not include time set aside for permanent education. However, individual requests to take part in science events and other types of training such as short courses were met. The fact that different staff work different hours and different days and the wide range of specialties among clinical staff were highlighted as factors hindering the provision of training of common interest to staff members. However, in-service training was provided on topics of general interest such as patient flow regulation. Several committees have been created to support the management of the polyclinic (death investigation, planning and management, patient record review, and biopsy), which, to a certain extent, act in a training capacity.

At the time of the study, negotiations were underway with the Federal University of Bahia to include the polyclinic in the university's medical residency program. The proposal was approved by the Assembly of Mayors; however, implementation was postponed due to the COVID-19 pandemic.

Despite its research potential, the polyclinic does not have a research unit. However, patient satisfaction surveys have been conducted. All interviewees mentioned that quality, humanization, welcoming, and excellence of facilities and care were factors determining satisfaction,

based information provided by the municipal ombudsman. Managers made frequent mention of patients' perceptions of the service, including political rivals: "it looks like a private facility", "I thought you had to pay", "is this run by the government?".

Chart 3 presents a synthesis of the empirical results based on the words of the interviewees, broadening the depth and breadth of the findings.

Discussion

Inspired by the experience of the state of Ceará^{20,25}, the implementation of vertical consortiums in Bahia is motivated by the acknowledgement that through horizontal cooperation it is impossible for municipal health authorities to meet the demand for SC in health regions with longstanding gaps in care. This may be considered the first positive aspect of the experience investigated by this study. However, returning to the initial research question, in addition to exploring the contribution polyclinics make to improving access to specialist services, this study used a concrete case to analyze and reflect upon which model is better suited to the delivery of SC in regionalized health care networks.

Regarding SC planning, agreement instruments and mechanisms need some fine tuning to tailor them to local realities and regional care parameters and take into account the complex dynamics of the functioning of the polyclinic. Nonetheless, it is important to recognize that planning SC to meet the needs of municipalities of varying sizes and with different care capacities is no easy task. However, by building synergies with SUS decision-making bodies such as regional and bipartite intermanagement committees, the Assembly of Mayors can leverage integrated regional planning, although it is not clear whether there is a convergence between these bodies²⁶.

In addition to formal decision-making spaces, informal mechanisms such as WhatsApp are used to facilitate the day-to-day management of care demands. In the case study, there is a productive complementarity between the two mechanisms, where the informality of agreements for the reallocation of provision is formalized within the regulation system, engendering solidarity and regional cooperation, which is rarely seen in formal decision-making spaces²⁷.

Another positive aspect is the monitoring of SC provision, which should also take into con-

Chart 3. Synthesis of the empirical results based on the words of the interviewees, Bahia, Brazil, 2021.

Dimensions and components
<p>Planning of SC and health transport provision based on regional health needs</p> <p>“The program contract was made so that the polyclinic could be implemented, but later, in the second/third year, I think they could have talked to us (polyclinic staff) to understand the peculiarities, the appointment numbers issue... A neurological consultation lasts thirty minutes to have quality. There’s no way I can make a neuro consultation last only fifteen minutes, as expected in the contract...” (polyclinic technical assistance 1, 2021)</p> <p>“It’s very difficult to get when demand is really low, but with the consortium demand is much higher. I have an average of one electro neurological consultation a month, it’s expensive to hire this service... The major difference with the polyclinic is the centralization of these difficulties to the municipalities” (Belo Campo 2, 2021)</p> <p>“When availability was lower, the prices were excessive. Today, the private network sends you pricing schedules, contract discounts, special offers... If the request [for a quote] has the department of health’s stamp, there’s a discount. Tests that in my day were considered high complexity are common today. An MRI scan back then was R\$1,200, now you can get one for 400. All this due to the services provided by the polyclinic” (Bom Jesus da Serra, 2021).</p> <p>“So the polyclinic brought more specialist services to the municipality, which helped a lot but has not solved everything. Demand outstrips supply at the polyclinic, for all imaging tests and some appointments” (Planalto 2, 2021)</p>
<p>Health transport</p> <p>“The minibus has really helped access, really, by appointment, no worries. It’s fantastic. There’s no political interference at all, you know?” (Belo Campo 2)</p> <p>“The level of organization of the polyclinic has been reflected in other services in the agreed integrated schedule and doesn’t have the same quality. For example, because in the polyclinic the minibus picks the patients up and drops them off at the clinic, the driver organizes the booking, takes them to the clinic and drops them off in their municipality, but that doesn’t happen in the agreed integrated schedule... So it generates an impact. Every test we book the person says: ‘what about the car?’ ‘This isn’t the same as the polyclinic!’” (Belo Campo 1)</p>
<p>Regulated access and care coordination by PHC</p> <p>“Primary care today has the role of referring patients to specialized care, but there’s a lack of well-established patient flows, referral protocols, flows, communication, a closer relationship with specialized care. The medical specialists continue to complain that they receive what they don’t need on a more routine basis. More urgent cases are the last to be seen. That hampers follow-up and the intervention. So I reckon it’s a national problem, regulation is a very complex issue” (councilor Vitória da Conquista 2, 2021)</p> <p>“If it’s really urgent, the doctor calls bookings: ‘I’ve got a patient with so an so, I need an MRI scan’ and so the team is already aware, the professional sends it with the report, so it makes it easier. When the doctor says it’s an ‘informal request’, it’s put on a list. Sometimes the patient arrives and says ‘Ah, it’s urgent’, and the doctor writes ‘informal request’, so we know it’s not urgent...” (Barra do Choça 1, 2021)</p> <p>“The system (SIGES) has a way of really quickly printing the history, evolution, recommendations. So there are professionals who, mainly when they realize that the patient isn’t educated enough to explain what happened, print the report and ask the patient to go back to primary care with it... Then there are others that follow the outpatient logic, requesting a follow-up appointment and discharging the patient” (polyclinic technical assistance 2, 2021)</p>
<p>Integration with other points of care and professionals in the regional HCN</p> <p>“When the polyclinic first arrived, I think they failed to show what a polyclinic is. The health secretary knows very well [what it is], the mayor, but I still feel that doctors on the frontline, nurses on the frontline still don’t really know and what we have...” (polyclinic technical assistance 2, 2021)</p>

it continues

sideration the difficulties faced by the polyclinic and health regions. Monitoring SC goals helps address gaps, for example those in the agreed integrated schedule, insofar as schedule compliance is largely impervious to the control of SUS

managers, with weak legal instruments to guarantee agreement²⁸.

A major advantage of the regional polyclinic arrangement is its capacity to recruit a broad range of quality SC professionals and ensure

Chart 3. Synthesis of the empirical results based on the words of the interviewees, Bahia, Brazil, 2021.

Interprofessional care in SC
“It’s because it’s difficult, apart from the stance of professionals... For example, the nurses, nutritionists, psychologists are extremely involved. In the medical team, some are, for example, on health committees, some are well involved, others not so much. We realize from the team that we can call on them for team working, beyond individual treatment” (polyclinic management 2021)
Sharing of electronic patient records, clinical protocols, and access to SC
“There’s an access manual for all the polyclinics in the state. Just that we know there are professionals who work one way and others who work another way. So, for example, with colonoscopy preparation, we don’t necessarily use what is in the manual. So the professional writes with me, I format it in a way that the regulator will understand, using accessible language. We try to make this preparation as simple as possible so that patients arrive in a condition in which they can do the examination” (polyclinic technical assistance 1)
Engagement between SC services and spaces for citizen participation
“The population needs to feel the work of the polyclinic... I think the problem is communication. The impression we have is that we don’t cover Conquista due to the lack of closeness to the community. There’s no point in having a facility that doesn’t engage with the people. People need to understand [the polyclinic’s] role” (local health committee member, 2021)
The role of matrix support, permanent education, teaching-service integration, and SC research
“We are going to have nurses’ week now. There’s going to be a course on basic life support, provided by the Consortium. But we don’t have a training plan” (polyclinic technical assistance 1, 2021)
“And patients compliment [the service] a lot, from entry to exit, their commitment to the patients... the responsibility they show to the patients. I haven’t received any complaints from patients so far.” (DoH Bom Jesus da Serra, 2021)

Source: Authors based on the interviews.

staff retention by offering better working terms and conditions and ensuring that staff work the contractual working hours. A key factor in this regard is the fact that the polyclinic is located in a city that is a referral hub for the macroregion and health training hub. This seems to be a potentially effective arrangement for guaranteeing access to SC in health regions, provided that high quality and safe health transport is an inseparable part of care²⁰.

Despite recognition of the importance of the polyclinic, the understanding that it is a mere service provider still prevails. This finding reinforces the argument defended in this study that the organization and provision of SC should be operated within a regionalized network approach. The use of the facility for instrumental reasons, without sharing responsibilities to address problems and seek joint solutions, reinforces the position of consortiums as mere strategies for expanding the provision of specialist procedures and, at the same time, the dominant concept of a curative model of care, which is little suited to the principles of comprehensiveness and continuous care^{18,26}.

The conditions and availability of means of transport to ensure that patients are able to get to

health services and policies to reduce transportation barriers to access differ across countries. In the United States, for example, it is estimated that 5.8 million people delayed medical care in 2017 because they did not have transportation. Furthermore, transportation barriers to health care have a disproportionate impact on the poor and patients with chronic conditions²⁹. There is limited literature on the relationship between transport and health in Latin American countries³⁰. The lack of transport policies, especially in areas isolated from large urban centers, means that patient transport depends on insufficient local government resources and out-of-pocket expenses. A study in a state in the northeast of Brazil showed that transport was the highest indirect cost not covered by the SUS related to cancer treatment, equivalent to 19.75% of the minimum wage. The study’s findings also reveal that patients living in smaller towns and cities spent more, showing a statistically significant difference in overall costs in comparison with patients from the capital³¹. In this sense, having a fleet of regularly serviced adapted vehicles, thereby minimizing transport risks⁹, is an important factor for guaranteeing access to SC, as shown in the present study.

One of the pillars of network-based models of SC is the regulation and coordination of access by PHC, which, albeit complementary, involve different principles and actions¹⁶. The arrangement investigated by this case study has made advances in the regulation process by using a computerized system, making schedules available in a timely manner and allowing slot rescheduling and reallocation. An important finding of this study is that the formalization of patient flow and booking of health transport using the SIGES contributes to reducing interference by local political actors in the mediation of access to SC, which is common in various settings²⁸.

Coordination of care by PHC is a critical bottleneck. Although PHC teams are located in other municipalities, the pivotal role of PHC must not be relegated to the background. In a fragmented system, the population “grows accustomed” to treatment by specialists¹⁵. Studies show that PHC providers in networks who have a low degree of centrality, even with the availability of specialists, do not reduce the utilization of emergency services by their patients with chronic conditions, in contrast to those who had a high degree of care coordination and a robust specialist network available².

Despite regional-level difficulties, it can be argued that the polyclinic arrangement is better suited to the development of coordination strategies. Specialists enjoy better working terms and conditions and are part of a single health facility, while turnover rates are low thus far. On the other hand, care coordination in health regions demands differentiated strategies mediated by digital technologies and, above all, needs to be a political and management priority, expressed in target-setting and performance-based pay for coordinators.

PHC referrals to SC are influenced by prior experience in the management of certain conditions and may benefit from a second assessment³². Regional-level care can benefit from the use of the SUS's telemedicine platform, *Telessaúde*, permanent education geared towards working in networks, and the urgent institutionalization of counter-referral, which is a feasible goal for the polyclinic. Precisely because the polyclinic is a regional service and several municipalities are a long way from the facility, an even greater priority should be to bring resolute care closer to patients.

Several studies have highlighted the benefits of adopting shared electronic patient records among points of care, showing that they facilitate

effective communication between patients and providers and horizontal and vertical integration across health services³³. Although Brazil is still a long way from having policies that provide for the standardization and interoperability of electronic patient records, an albeit inadequate stop-gap solution would be the optimal use of the functions of the SIGES, which permits counter-referrals.

The Manual for Accessing Regional Polyclinic Diagnostic and Treatment Support Services mentioned above²⁴ constitutes an important tool for establishing SC patient flows. However, adherence to protocols governing the management of transitions between different levels of care entails, among other aspects, process standardization, training, and the clear definition of provider responsibilities³³. There are several barriers to doctor adherence to clinical practice guidelines, including: lack familiarity, disagreement with evidence, and inability to overcome the inertia of previous practices³⁴. These factors can guide specialist permanent education and matrix support, which are actions that have yet to be developed.

Engagement between the polyclinic and spaces for citizen participation is also a key element in network-based SC models. Although the implementation of the SUS has led to the creation of regional and federal decision-making spaces, the desired level of cooperation does not seem to have been attained, partially because these arrangements are largely impervious to networks, patients, workers and external actors²⁷. While consortiums have strengthened regionalization^{20,25}, exemplified by the experience in Ceará, deepening the relationship between IHCVITA/ the polyclinic and spaces for citizen participation in the planning and monitoring of actions remains a challenge²⁶. In addition, permanent dialogue between the polyclinic and patients and families should be promoted so that the local community understands that repositioning SC in networks does not restrict access to specialists³.

Matrix support, permanent education, teaching-service integration, and research are key elements. Turning the polyclinic into a hub for training and generating knowledge that is capable of improving internal and SUS work processes is not only feasible, it can contribute to shifting the polyclinic away from an exclusively SC provider role. The results of patient satisfaction surveys should be valued, adopting relevant measures to improve services³⁵ and ensure policy sustainability²⁰.

Although this article does not address political aspects of the implementation process and re-

gional dynamics, these elements also help understand the limitations and potential of the IHC/polyclinic arrangement for the organization and delivery of SC in the SUS.

Finally, it is important to highlight that, in addition to addressing care gaps and the challenges inherent in the SUS highlighted by this work, improvements are needed to local health networks

and care provision, together with the strengthening of PHC, so it can become more broad-ranging and resolute and assume its central role in the health system. It is also argued that the regional polyclinic arrangement, combined with the provision of high quality and safe health transport, provides more concrete opportunities to progress towards an effective network-based SC model.

Collaborations

PF Almeida was responsible for the design, data collection, planning, analysis, interpretation and writing of the manuscript. KS Silva participated in the collection and analysis of results. A Bousquat participated in the analysis, interpretation and writing of the manuscript.

Funding

This study was developed in the Post-Doctoral Program carried out by the first author at the Faculdade de Saúde Pública/USP, with a PDS scholarship from Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), under the supervision of Dr. Aylene Bousquat. PF Almeida and A Bousquat are productivity fellowships of the CNPq.

References

1. Cyr ME, Etchin AG, Guthrie BJ, Benneyan JC. Access to specialty healthcare in urban versus rural US populations: a systematic literature review. *BMC Health Serv Res* 2019; 19:974.
2. She Z, Gaglioti AH, Baltrus P, Li C, Moore MA, Immergluck LC, Rao A, Ayer T. Primary Care Comprehensiveness and Care Coordination in Robust Specialist Networks Results in Lower Emergency Department Utilization: A Network Analysis of Medicaid Physician Networks. *J Prim Care Community Health* 2020; 11:2150132720924432.
3. Cohen E, Wang CJ, Zuckerman B. Specialized Care without the Subspecialist: A Value Opportunity for Secondary Care. *Children* 2018; 5(6):69.
4. Solla J, Chioro A. Atenção ambulatorial especializada. In: Giovanella L, Escorel S, Lobato LVC, Noronha JC, Carvalho JI, organizadores. *Políticas e sistemas de saúde no Brasil*. 2ª ed. Rio de Janeiro: Fiocruz; 2012. p. 547-576.
5. Tikkanen R, Osborn R, Mossialos E, Djordjevic A, Wharton G. *International Profiles of Health Care Systems 2020*. Washington, D.C.: The Commonwealth Fund, London School of Economics and Political Science; 2020.
6. Lima LD, Albuquerque MV, Scatena JHG, Melo ECP, Oliveira EXG, Carvalho MS, Pereira AMM, Oliveira RAD, Martinelli NL, Oliveira CF. Regional governance arrangements of the Brazilian Unified National Health System: provider diversity and spatial inequality in service provision. *Cad Saude Publica* 2019; 35(Sup. 2):e00094618.
7. Fleet R, Pelletier C, Marcoux J, Maltais-Giguère J, Archambault P, Audette LD, Plant J, Bégin F, Tounkara FK, Poitras J. Differences in Access to Services in Rural Emergency Departments of Quebec and Ontario. *PLoS One* 2015; 10(4):e0123746.
8. Tesser CD, Poli Neto P. Atenção especializada ambulatorial no Sistema Único de Saúde: para superar um vazio. *Cien Saude Colet* 2017; 22(3):941-951.
9. Almeida PF, Santos AM, Cabral LM, Bousquat A, Fausto MC. Provision of specialized care in remote rural municipalities of the Brazilian semi-arid region. *Rural Remote Health* 2021; 21:6652.
10. Bradley EH, Byam P, Alpern R, Thompson JW, Zerihun A, Abebe Y, Curry LA. A Systems Approach to Improving Rural Care in Ethiopia. *PLoS One* 2012; 7(4):e35042.
11. Zhao Q, Wang L, Tao T, Xu B. Impacts of the “transport subsidy initiative on poor TB patients” in rural China: A patient-cohort-based longitudinal study in rural China. *PLoS One* 2013; 8(11):e82503.
12. Mendes EV. *As Redes de Atenção à Saúde*. 2ª ed. Brasília: OPAS; 2011.
13. Syed ST, Gerber BS, Sharp LK. Traveling towards disease: transportation barriers to health care access. *J Community Health* 2013; 38(5):976-993.
14. Norman AH, Tesser CD. Prevenção quaternária na atenção primária à saúde: uma necessidade do Sistema Único de Saúde. *Cad Saude Publica* 2009; 25(9):2012-2020.
15. Guedes BAP, Vale FLB, Souza RW, Costa MKA, Batista SR. A organização da atenção ambulatorial secundária na SESDF. *Cien Saude Colet* 2019; 24(6):2125-2134.
16. Mendes EV. O desafio da Atenção Secundária Ambulatorial Especializada: um novo modelo de integração em rede com a Atenção Primária à Saúde. In: Mendes EV. *Desafios do SUS*. Brasília: CONASS; 2019. p. 613-672.
17. Silva CR, Carvalho BG, Cordoni Júnior L, Nunes EFPA. Dificuldade de acesso a serviços de média complexidade em municípios de pequeno porte: um estudo de caso. *Cien Saude Colet* 2017; 22(4):1109-1120.
18. Botti CS, Artmann E, Spinelli MAS, Scatena JHG. Regionalização dos Serviços de Saúde em Mato Grosso: um estudo de caso da implantação do Consórcio Intermunicipal de Saúde da Região do Teles Pires, no período de 2000 a 2008. *Epidemiol Serv Saude* 2013; 22(3):491-500.
19. Rocha CV. A cooperação federativa e a política de saúde: o caso dos Consórcios Intermunicipais de Saúde no estado do Paraná. *Cad Metropole* 2016; 18(36):377-399.
20. Almeida PF, Giovanella L, Martins Filho MT, Lima, LD. Redes regionalizadas e garantia de atenção especializada em saúde: a experiência do Ceará, Brasil. *Cien Saude Colet* 2019; 24:4527-4540.
21. Bahia. Secretaria da Saúde do Estado da Bahia. Assessoria de Planejamento e Gestão. *Observatório Baiano de Regionalização*. Salvador: Secretaria da Saúde do Estado da Bahia; 2021.
22. Bardin L. *Análise de Conteúdo*. São Paulo: Edições 70; 2015.
23. Bahia. Secretaria de Estado da Saúde. *Caminhos do Cuidar: estratégia para a oferta oportuna ao diagnóstico de câncer* [Internet]. [acessado 2021 mar 13]. Disponível em: <http://telessaude.saude.ba.gov.br/wp-content/uploads/2022/03/webpalestra-10.12.2019.pdf>.
24. Bahia. Secretaria da Saúde do Estado da Saúde. *Manual de acesso aos serviços de Apoio Diagnóstico e Tratamento das Policlínicas Regionais de Saúde do Estado da Bahia*. Salvador: SESAB; 2017.
25. Julião KS, Olivieri C. Cooperação intergovernamental na política de saúde: a experiência dos consórcios públicos verticais no Ceará, Brasil. *Cad Saude Publica* 2020; 36(3):e00037519.
26. Lui L, Schabbach LM, Nora CRD. Regionalização da saúde e cooperação federativa no Brasil: o papel dos consórcios intermunicipais. *Cien Saude Colet* 2020; 25(12):5065-5074.
27. Padilha A, Oliveira DC, Alves TA, Campos GWS. Crise no Brasil e impactos na frágil governança regional e federativa da política de saúde. *Cien Saude Colet* 2019; 24(12):4509-4518.
28. Mello GA, Pereira APCM, Uchimura LYT, Iozzi FL, Demarzo MMP, Vianna ALA. O processo de regionalização do SUS: revisão sistemática. *Cien Saude Colet* 2017; 22(4):1291-1310.
29. Wolfe MK, McDonald NC, Holmes GM. Transportation Barriers to Health Care in the United States: Findings from the National Health Interview Survey, 1997-2017. *Am J Public Health* 2020; 110(6):815-822.
30. Becerra JM, Reis RS, Frank LD, Ramirez-Marrero FA, Welle B, Cordero EA, Mendez Paz F, Crespo C, Dujon V, Jacoby E, Dill J, Weigand L, Padin CM. Transport and health: a look at three Latin American cities. *Cad Saude Publica* 2013; 29(4):654-666.

31. Araújo JKL, Silva LM, Santos CA, Oliveira IS, Fialho GM, Del Giglio A. Assessment of costs related to cancer treatment. *Rev Assoc Med Bras* 2020; 66(10):1423-1430.
32. Mori NLR, Olbrich Neto J, Spagnuolo RS, Juliani CMCM. Resolution, access, and waiting time for specialties in different models of care. *Rev Saude Publica* 2020; 31(54):18.
33. Janett RS, Yeracaris PP. Electronic Medical Records in the American Health System: challenges and lessons learned. *Cien Saude Colet* 2020; 25(4):1293-1304.
34. Cabana MD, Rand CS, Powe NR, Wu AW, Wilson MH, Abboud PA, Rubin HR. Why don't physicians follow clinical practice guidelines? A framework for improvement. *JAMA* 1999; 282(15):1458-1465.
35. Doubova SV, Infante-Castañeda C, Roder-DeWan S, Pérez-Cuevas R. User experience and satisfaction with specialty consultations and surgical care in secondary and tertiary level hospitals in Mexico. *BMC Health Serv Res* 2019; 19:872.

Article submitted 19/02/2022

Approved 09/06/2022

Final version submitted 11/06/2022

Chief editors: Romeu Gomes, Antônio Augusto Moura da Silva