Integrality of Care for Women with Breast Cancer: Access and Organization in the Health Care Network in a Northeast State

https://doi.org/10.32635/2176-9745.RBC.2026v72n2.5497EN

Integralidade do Cuidado à Mulher com Câncer de Mama: Acesso e Organização na Rede de Atenção à Saúde em um Estado do Nordeste

Integralidad del Cuidado a la Mujer con Cáncer de Mama: Acceso y Organización en la Red de Atención a la Salud en un Estado del Nordeste

Rosalva Raimundo da Silva[1]; Mauricéa Maria de Santana[2]; Adriana Falangola Benjamin Bezerra[3]; Jurema Telles de Oliveira Lima[4]; Tereza Maciel Lyra[5]

ABSTRACT

Introduction: In Brazil, breast cancer is the most common cancer among women and the leading cause of death from neoplasms. Late diagnoses and delays in treatment impact female survival and the sustainability of the health system. **Objective:** To analyze the comprehensiveness of care for women with breast cancer, considering access and organization of the Health Care Network in a Brazilian Northeast state. **Method:** A qualitative, exploratory study with empirical phenomenological design. Semi-structured interviews were conducted with users, oncology services professionals, primary care, and municipal, state, and federal management. **Results:** Difficulties were found in primary care in the systematic mapping of the territory for timely breast cancer control interventions. Users face long delays between suspicion, diagnosis, and the start of treatment. Problems with the quality of and access to specialists and examinations, including the availability of pathology services (collection and histopathology) within the National Health System (SUS), force many women to search for private assistance to expedite diagnosis and treatment, generating personal costs and delays for those who depend exclusively on the public system. Furthermore, the fragmentation of therapeutic steps across different accredited services and locations hinders continuity of care, complicates the user's journey, and overburdens services in the capital. **Conclusion:** The poor integration and coordination among levels of care highlight the need for organized screening and implemented lines of care, with defined flows, trained professionals, and equitably infrastructure focused on ensuring comprehensive, timely, and quality care.

Key words: Breast Neoplasms; Women's Health; Health Services Accessibility; Integrality in Health.

RESUMO

Introdução: No Brasil, o câncer de mama é o mais comum entre as mulheres e a principal causa de morte por neoplasias, diagnósticos tardios e atrasos no tratamento impactam a sobrevida feminina e a sustentabilidade do sistema de saúde. **Objetivo:** Analisar a integralidade do cuidado à mulher com câncer de mama, considerando o acesso e a organização da Rede de Atenção à Saúde em um Estado do Nordeste. **Método:** Estudo qualitativo, exploratório, com delineamento fenomenológico empírico. Entrevistas semiestruturadas foram realizadas com usuárias, profissionais dos serviços de oncologia, atenção primária e gestão municipal, estadual e federal. **Resultados:** Evidenciaram-se dificuldades da atenção primária na leitura sistemática do território para intervenções oportunas no controle do câncer de mama. Usuárias enfrentam longas esperas entre a suspeita, o diagnóstico e o início do tratamento. Problemas na qualidade e no acesso a especialistas e exames, incluindo disponibilização de serviço de patologia (coleta e anatomopatológico) no Sistema Único de Saúde (SUS), levam muitas mulheres a recorrerem ao setor privado para agilizar o diagnóstico e o tratamento, gerando custos pessoais e atrasos para quem depende exclusivamente do sistema público. Ademais, a fragmentação das etapas terapêuticas em diferentes serviços habilitados e localidades prejudica a continuidade do cuidado, dificulta o percurso das usuárias e sobrecarrega os serviços da capital. **Conclusão:** A insuficiente integração e a coordenação entre os níveis assistenciais evidenciam a necessidade de rastreamento organizado e linha de cuidado implementada, com fluxos definidos, profissionais capacitados e infraestrutura distribuída de forma equitativa, com foco na garantia do cuidado integral, oportuno e de qualidade.

Palavras-chave: Neoplasias da Mama; Saúde da Mulher; Acesso aos Serviços de Saúde; Integralidade em Saúde.

RESUMEN

Introducción: En el Brasil, el cáncer de mama es el más común entre las mujeres y la principal causa de muerte por neoplasias. Los diagnósticos tardíos y los retrasos en el tratamiento impactan en la supervivencia femenina y en la sostenibilidad del sistema de salud. **Objetivo:** Analizar la integralidad de la atención a las mujeres con cáncer de mama, considerando el acceso y la organización de la Red de Atención a la Salud en un estado del nordeste del Brasil. **Método:** Estudio exploratorio cualitativo con un diseño fenomenológico empírico. Se realizaron entrevistas semiestructuradas con usuarias, profesionales de servicios de oncología, atención primaria y gestión municipal, estatal y federal. **Resultados:** Se evidenciaron dificultades en la atención primaria en la lectura sistemática del territorio para intervenciones oportunas en el control del cáncer de mama. Las usuarias enfrentan largas esperas entre la sospecha, el diagnóstico y el inicio del tratamiento. Los problemas con la calidad y el acceso a especialistas y exámenes, incluyendo la disponibilidad de servicios de patología (toma de muestra y anatomopatológico) dentro del Sistema Único de Salud (SUS), llevan a muchas mujeres a recurrir al sector privado para agilizar el diagnóstico y el tratamiento, generando costos personales y demoras para quienes dependen exclusivamente del sistema público. Además, la fragmentación de los pasos terapéuticos entre diferentes servicios acreditados y localidades perjudica la continuidad del cuidado, dificulta el recorrido de las usuarias y sobrecarga los servicios en la ciudad capital. **Conclusión:** La insuficiente integración y coordinación entre los niveles de atención resalta la necesidad de una detección organizada y una ruta de atención implementada, con flujos definidos, profesionales capacitados e infraestructura distribuida equitativamente, enfocada en garantizar una atención integral, oportuna y de calidad.

Palabras clave: Neoplasias de la Mama; Salud de la Mujer; Acceso a los Servicios de Salud; Integralidad en Salud.

[1,2,5]Fundação Oswaldo Cruz (Fiocruz), Instituto de Pesquisas Aggeu Magalhães. Recife (PE), Brasil. E-mails: rosalva_jupi@hotmail.com; mauriceasantana@gmail.com; tereza.lyra@fiocruz.br. Orcid iD: http://orcid.org/0000-0003-2096-9815; Orcid iD https://orcid.org/0000-0001-5822-3889; Orcid iD https://orcid.org/0000-0002-3600-7250
[3]Universidade Federal de Pernambuco (UFPE). Recife (PE), Brasil. Orcid iD: https://orcid.org/0000-0002-5278-3727. E-mail: adriana.bbezerra@ufpe.br
[4]Instituto de Medicina Integral Professor Fernando Figueira. Recife (PE), Brasil. Orcid iD: https://orcid.org/0000-0003-2671-3570. E-mail. jurematsales@gmail.com
Corresponding author: Rosalva Raimundo da Silva. Residencial The Sun, Lote 04, SHTN Trecho 2 – Asa Norte. Brasília (DF), Brasil. CEP 70800-220. E-mail: rosalva_jupi@hotmail.com

INTRODUCTION

Breast cancer is the most common and main cause of mortality by cancer in women[1]. It is estimated that 78,610 new cases of breast cancer in the triennium 2026-2028 will occur annually in Brazil, 17,130 in the Northeast region and 3,190 in the state of Pernambuco, respectively[1].

The increase of the demand for timely early detection and breast cancer treatment are challenging for the National Health System (SUS), aggravated during the COVID-19 pandemic with negative impacts on oncologic services[2]. Delayed breast cancer diagnosis threat not only the women's health but also the sustainability of SUS with more aggressive and costly treatments[3,4].

The integrality of SUS encompasses several dimensions: the perspective of the human being as a biopsychosocial entity in individual and collective approaches, understanding the social determinants of health and diversity of health demands requiring intersectoral responses, different levels of attention, organization of services network and articulation of promotion, prevention and recovery[5,6].

Health attention network (HAN) plays a key role to ensure the integrality with health primary attention (HPA) as gateway to facilitate early diagnosis and coordination of the flows[7,8]. The secondary level supports HPA to coordinate care and ensures referrals and fast access with specialized evaluations and proper treatment for women diagnosed with breast cancer. The high complexity offers an integrated approach and breast cancer treatment[9].

It is essential to understand the critical points of access to HAN because adequate regionalization reinforces integral care, reduces geographical and assistance disparities and optimizes the use of the equipments[10]. The access to health services should be timely and suited to the user's demands[11].

This article analyzes the integrality of care to women with breast cancer in the perspective of access and organization of HAN in a Northeast state.

METHOD

Exploratory and qualitative study with sequential data collection, which allowed the in-depth understanding of the phenomenon[12]. Grounded on the principle of integrality and guidelines of the line of care of breast cancer[13], the study was based on the methodological-theoretical of empirical phenomenology[14] to comprehend the perceptions and experiences of the users, health professionals and managers.

The sample was intentional and enrolled users in breast cancer treatment, health professionals and managers. Nine users in breast cancer treatment whose origin were four health macroregions of the state (I-Metropolitana, II-Agreste, III-Sertão and IV-Vale do São Francisco and Araripe) were interviewed and treated at the high oncologic complexity center "*Instituto de Medicina Integral Professor Fernando Figueira (Cacon IMIP*)" and at the high oncologic complexity unit "*Hospital do Câncer de Pernambuco (Unacon HCP)*" in the municipality of Recife, the state capital. IMIP and HCP were chosen because they treat women with breast cancer in the entire state. Three professionals of Unacon and Cacon, five professionals of health primary attention (HPA) working at the units where the users were being treated and health managers of the state, municipal health secretaries and of the Ministry of Health specialized in oncologic planning have also joined the study (Chart 1).

The field work occurred between September and November 2023 guided by sequential method in six interconnected stages (Chart 2).

The selection of the users was opportunistic while they were waiting for the clinical visit, considering the origin and health macro-region. The documental analysis of the charts complemented the information collected. The professionals of HPA were chosen due to their connection with the user. Experts and managers specialized in oncologic care were invited.

40-minute individual interviews were conducted by the principal investigator without interruptions and recorded through specific software. The transcriptions were revised to keep the integrity of the content. All the professionals validated the interviews post transcription.

Content analysis was applied to analyze the interviews. In the perspective of phenomenology, following the steps described by Giorgi[14], it was attempted to disclose the units of signification that emerged from the participants experiences, revealing the essence of their experiences about the access and organization of HAN to ensure the integrality of the care to the woman with breast cancer in Pernambuco, resulting in three thematic categories structured by the levels of health attention: 1) Action of primary attention in breast cancer: it encompasses the systematic mapping of the territory, screening, health surveillance and coordination of the care; 2) Challenges of specialized attention in breast cancer diagnosis: access to mammogram (screening and diagnosis), ultrasound, clinical visit with an expert, biopsy and quality of the diagnostic exams; 3) Integral care of tertiary attention: continuity of the assistance, integration among oncologic and multiprofessional services, timely access to treatment (surgery, chemotherapy, radiotherapy) and availability for urgencies and emergencies.

The Ethics Committees of "*Instituto de Pesquisas Aggeu Magalhães*" approved the study, report number

Chart 1. Users, professionals and managers interviewed per treatment facility and service unit. Pernambuco, Brazil, 2023

Stage 1 – Users in treatment					
Quantity of users	**Macro-region of the municipality**	**Unacon/ Cacon**	**Distance between the residence of the user and Unacon/Cacon**	**Code**	**Inclusion and exclusion criteria**
1	I	HCP	18 km	User 1-M1	Inclusion: women older than 18 years in breast cancer treatment treated at the selected Unacon/ Cacon whose origin were the four health macroregions Exclusion: women with other types of neoplasms
1	I	HCP	10 km	User 3-M1	
1	II	HCP	135 km	User 1-M2	
1	III	HCP	470 km	User 1-M3	
1	IV	HCP	682 km	User 1-M4	
1	I	IMIP	8 km	User 2-M1	
1	II	IMIP	211 km	User 2-M2	
1	III	IMIP	509 km	User 2-M3	
1	IV	IMIP	535 km	User 2-M4	
TOTAL: 9 users					
Stage 2 – Professionals of the Oncology Service					
Hospitals	**Quantity of professionals**	**Code**			Inclusion: mastologists and radiotherapists working for at least one year at Unacon/Cacon Exclusion: professionals on vacation or leave of absence and those who do not work in breast cancer treatment
IMIP	1	P1 – Oncology service			
HCP	1	P2 – Oncology service			
IMIP and HCP	1	P3 – Oncology service			
TOTAL: 3 professionals of the oncology service					
Stage 3 – Professionals of Health Primary Attention (user registered in the jurisdiction)					
Professionals of HPA	**Quantity of professionals**	**User in treatment**	**Code**		Inclusion: physicians and nurses of the Family Health Strategy (FHS) where users are registered Exclusion: other than FHS where the users are registered
Physician	1	IMIP	P1 – Primary Attention		
Nurse	1	IMIP	P2 – Primary Attention		
Nurse	1	IMIP	P3 – Primary Attention		
Physician	1	HCP	P4 – Primary Attention		
Nurse	1	HCP	P5 – Primary Attention		
TOTAL: 5 Professionals of Health Primary Attention					
Stage 4 – Health Managers					
Type of management	**Quantity of professionals**	**Code**			Inclusion: experts in oncologic planning Exclusion: non-experts in oncologic management
Municipal	1	Municipal Management			
State	1	State Management			
Federal	1	Ministry of Health			
TOTAL: 3 managers					

Chart 2. Sequential methodological flow of collection and integrated analysis according to the stage. Pernambuco, Brasil, 2023

Stage	Participants	Sequential interviews	Results and elaboration of the script
First	Users (n=9)	Script 1 – Users	Analysis of the results and elaboration of script 2
Second	Oncology professionals (n=3)	Script 2 – Oncology professionals of Unacon/Cacon	Analysis of the results of stages 1 and 2 and elaboration of script 3
Third	Professionals of HPA (n=5)	Script 3 – HPA professionals	Analysis of the results of stages 1, 2, 3 and elaboration of the script 4
Fourth	Municipal Manager (n=1)	Script 4 – Municipal managers	Analysis of the results of stages 1, 2, 3 and 4 and elaboration of script 5
Fifth	State Manager (n=1)	Script 5 – State managers	Analysis of the results of all the stages and elaboration of the guiding question
Sixth	Federal Manager (n=1)	Guiding question – Ministry of Healh	-

6.142.468, CAAE (submission for ethical review) 67124722.2.0000.5190, of "*Hospital do Câncer de Pernambuco*", report number 6,219,126, CAAE (submission for ethical review) 67124722.2.3001.5205, and of the "*Instituto de Medicina Integral Professor Fernando Figueira*", report number 6,298,573, CAAE (submission for ethical review) 67124722.2.3002.5201, in compliance with Directive 466/2012[16] of the National Health Council(CNS).

RESULTS AND DISCUSSION

The analysis considered the integrality, addressing the access and the organization of prevention, diagnosis and treatment of breast cancer in different levels of health attention[5].

Professionals of Family Health Strategy report lack of systematic mapping of the reality related to breast cancer as problems of the new information system for monitoring and evaluation of the screening of women in the age range recommended by the Ministry of Health and those considered as windows of risk. This aspect was reported by users and professionals according to the narratives below:

> Back then, we have all this because you printed it out and it was all there . [...] today, I don't know my population. [...] if you asked me, I had it all in my hand [...] I knew it all. Today, I don't know (P1 – Primary Attention).

I lived there for 5 years, she (health community worker) never visited me [...] went there, took all my cards to register every one (User 2 - M1).

Professionals and users point out fragmentation of care at HPA exposing the lack of an effective operational method to meet the population demands[7,17], indicating diversion from the comprehensive and integral goals of HPA and health surveillance[5,10] that should address breast cancer screening as a step of an organized demand[5,10]. The reports highlight the distancing from policies and guidelines of cancer control in HPA, the main gateway, organizer of the network and coordinator of the care[5,7]. The territorial logic facilitates the ownership of the health needs of the population registered, allows the situational diagnosis of the area and timely screening and intervention to control breast cancer[18].

To understand the challenges of specialized attention of early diagnosis, it is required screening for early detection of pre-cancerous lesions or in pre-clinical stage through exams of the asymptomatic target-population. The second strategy is early diagnosis that aims to identify cancer in initial stage in individuals who have already presented suspicious signs or symptoms of the disease in any age-range[19]. Both strategies strongly rely on HPA actions.

However, the narratives exposed difficulties of access to screening mammograms (asymptomatic) and diagnostic mammogram (symptomatic), especially in women out of the age range of populational screening. These barriers compromise equity as the narratives show:

> You can do only in private clinics. In county hospitals, only after 50 (User 2 - M1).

> [...] for women out of the age range, it is difficult, they don't accept even with the justification [...] I

> went to the clinic [...] a node was found, more or less 2 to 3 cm. And I asked to take her there. As she was a wheelchair user, she had difficulties in going to another service [...] asked the caretakers to take her there. She went but couldn't do because she was older than 69 years of age [...]. Thought it was preposterous, an 80-year old lady with a visible node and you ask to do a mammogram that is available at the unit, near her house and it was not done because she was 80. The technicians who were there called the county but it was not authorized (P2 – Primary attention).

These situations reflect the necessity of qualifying the access. It is mandatory that abnormal cases as palpable nodes are prioritized regardless of age-range. As highlighted by the Ministry of Health:

> [...] these are topics that need to improve, we have to qualify the access for this 80-year old woman out of the screening age range. But there is no reason to not do the exam [...] what you can't do is block her access to the diagnosis since the beginning simply because she is out of the screening age range.

The access to mammogram, either for screening or diagnosis is through HPA responsible for screening and first actions of early diagnosis, including the investigation of suspicious signs and symptoms. The narratives expose challenges of equity of access to exams[7,19], corroborating misleading interpretations between both types of mammograms.

HPA should reinforce its coordinating role of the care, promoting effective integration with other levels of assistance to ensure timely and equity access. Additionally, diagnostic mammograms of women with suspicious signs and symptoms should be prioritized to ensure early detection and best clinical outcomes[7,19-22].

Reports indicate that some municipalities do mammograms in 50-69 years women (recommended by the Ministry of Health until September 2025) while state specialized attention units (secondary level) implemented by the Health State Secretary to meet deficits of specialized services and strengthen the attention network[23] and Unacon and Cacon (tertiary) did the exam for 40-year old women or older:

> Here at the state specialized unit, we decided to do mammograms for 40-year old women or older [...] by spontaneous demand (state level).

> At IMIP we follow the law that determines that 40-year old women or older are granted access to mammogram (P1 – Oncology service).

The narratives corroborate the lack of consensus about the screening age. HPA can't request services provided by the municipal network because they follow the recommendations of the Ministry of Health (biannual for 50-69 years) making health professionals decision difficult[22]. The state specialized units and Unacon/Cacon abide to law number 11,664 of April 29, 2008 modified by law number 14,335 of May 10, 2022. The evidences in the literature suggest that health systems and professionals consider HAN's individualized and organized screening based on evaluation, risk management and vulnerabilities of breast cancer[21].

Although until September 2025 population screening aimed the 50-69 age range biannually, the access for 40-49 years old and older than 69 years without suspicious signs and symptoms should be ensured based on benefits and risks of the exam. This approach not only improves organized screening but also ensures that all the women are entitled to mammograms either for screening in the priority age range, individual access for other age-ranges or timely diagnosis and contributing to reduce the mortality by breast cancer in all ages.

The fragilities observed in HPA are associated with structural and operational obstacles that compromise the efficacy of the screening and the ability to ensure early diagnosis in secondary attention. The narratives of users, health professionals and managers indicate that, although the diagnosis delay is strongly influenced by the quality of actions taken in HPA, it is not the only determinant factor. The availability of specialized services and how they are organized aggravate the barriers of access and continuity of care.

> We offer mammogram at the 12 state specialized units connected to each regional health management [...] there is offer but not demand only for mammograms [...] the loss is primary. [...] some municipalities offer the service but there is no scheduling. And other equipment [health facilities] [...] absenteeism (state management).

Problems of distribution and utilization of mammogram equipment, network flows and organization as the narratives exposed, lead to absenteeism, idleness of equipment and low rate of exams performed, challenges that could be resolved with the reorganization across HPAs and specialized outpatient attention without expansion of secondary services through improvement of the user's journey to attend the service[8,10-24]. The municipal management of Recife, the state capital, claims there are no problems in offering mammograms:

> 80 exams daily [...] decentralized [...] she does not need to schedule a visit [...] we are able to do 1,200 to 1,500 mammograms monthly (municipal management).

However, the quantity of exams is below the expected in view of the amount of screened resident women[25]. Exam coverage can improve if the profile of the population registered is known and with initiatives of active search.

Ultrasound is utilized as a complement of the mammogram. All the users and professionals of HPA report difficulties of access to this exam, even worst for women out of the screening age-range. As an alternative, the users search private services, which is an additional financial burden for most of them if they borrow money to do the exam according to the narratives below:

> My mammograms were inconclusive for cancer diagnosis, but the ultrasound was effective [...] did at a private clinic, R$80 (user 1 – M1).

> [...] ultrasound is a financial burden. [...] most of the times we do on our own. Have to see things through [...] we don't do not because we don't know. It is because we can't access (P1 – primary attention).

> The patients have difficulties to access [...] they have to do imaging exams in less costly private clinics (P1 – oncology service).

Ultrasound can improve early detection of cancer in dense or non-dense breasts[26,27]. A meta-analysis concluded that ultrasound in women with dense breasts detected four additional cases of cancer per thousand women with negative mammograms and nearly doubles the rate of referrals for additional evaluation and the exam should be considered as supplementary method, not isolate[27].

Significant barriers were found in the access to a specialized physician in SUS. The users have utilized costly private services, a financial burden for most of them.

> Oncologist visit, R$350,00. The cardiologist, R$400,00. In total, R$2.372,00. I didn't have this cash, my family gave me part, my daughter got a credit card with her friend, then I did. But I had to borrow money, I'm still paying. Five thousand reais (user 1 M4).

> [...] if I wait for the mastologist to do the biopsy, it won't happen, what can I do? Cancer hospital, screening [at HCP] (P4 – primary attention).

> Actually, we have seven mastologists, it is easy to schedule a visit [...] (municipal management).

There were significant barriers and delays of diagnosis and treatment, especially for those who rely on SUS and have to wait more than the law-mandate time[28,29] and pay for visits to the specialists to reduce the time of the diagnosis[24,30]. This scenario exposes the disparities between planning and the reality.

The narratives below highlight the difficulties of access to biopsy in SUS due to lack of services confirmed by the managers. The users who paid for the services opted for this strategy to speed up the access to tertiary service.

> Biopsy costs 500 reais more or less, and to ship the exams, plus one hundred reais. Actually, I wouldn't be here, I wouldn't, this is a fact. My friends are still waiting for SUS (User 2 – M4).

> [...] If she pays for a private biopsy on her own, she goes to a different queue because she has the diagnosis, she waits less for a medical visit than who doesn't have a biopsy yet (P2 – oncology service).

> We don't count with outsourced contractors to do the pathology, core biopsy to speed up the diagnosis [...] at state level, the Unacons are assigned this task (state management).

SUS actual limitations require a restructuring at municipal and state level. The lack of availability and organization of specialized attention are the main barriers of early diagnosis and access to timely treatment. These inequities contribute to late diagnosis, low survival and high mortality[9], in addition to financial burden for the users and prolonged waiting time for those who rely exclusively on SUS[24,30].

The quality of diagnostic and screening exams is pivotal for the effectiveness of early detection of breast cancer. The sensitiveness of inferior mammograms is 66%, while exams that follow quality standards can reach accuracy of 85% to 90%, especially in women older than 50 years. High quality exams allow the identification of tumors up to two years before lymph node compromise, improving the diagnosis and survival[31].

The quality of screening exams is heterogeneous and variability in public and private services reflect regional disparities and structural challenges. The narratives of users, health professionals and managers illustrate these difficulties:

> The diagnosis was wrong because the professional was unqualified, the result was Birads 4,8, this does not exist, it is 1, 2, 3, 4, 5, 6 (user 1 – M1).

> Usually the county ultrasound is outsourced, sometimes of poor quality [...] inexperienced imaging professionals can lose some cases, need the report to confirm (P4 – Primary Attention).

> We ask the patient with positive biopsy to bring the blades and blocks. It is a waste of time, unfortunately, but there were cases of false positive diagnosis (P1 – oncology services).

> It is not only the public services, privates too, the quality of the exams is challenged (municipal management).

Further to the reduced offer of definitive cancer diagnosis, inferior imaging leads to unnecessary repetitions of exams, delays of treatment beginning and cost rise both for SUS and the users. It is important to develop strategies to address the current inequities and avoid the repetition of diagnostic exams to optimize time and resources[32,33].

The challenges detected in primary and secondary attention reveal the importance of a robust and integrated tertiary attention able to provide the continuity of care. The users that search for treatment at Unacon HCP and Cacon IMIP want to be sure that a full treatment with all the services available will be offered as the narratives show:

> I know that there is Garanhuns, Caruaru. But I don't want to leave IMIP, because of the staff, the assistance [...] (user 2 – M2).

> Petrolina is closer. I would go there, but I wouldn't have all the exams I have here, would have to search another one and wait in a queue. Here you can do all the exams, we have already lost two uncles [...] he jumped from one hospital to the other to schedule the visit... I could not do this, he didn't either, gave up (user 2 – M4).

There are Unacons in every health macro-region of Pernambuco. Global disparities in distribution and access to ideal services compromise the results for users with breast cancer[32,34]. Poor structure and organization of a few Unacons have overburdened the services at the state capital[33].

Further to the barriers of access to prior levels of tertiary assistance, most of the users report waiting windows as summarized in the narratives:

> My suspicion was in January, I managed to get here in June [...] The treatment itself, only in September of this same year (user 1 – M1).

> I had this tumor for two years. [...] the lump was large (user 1 – M3).

> The big problem is, the patient does the biopsy on date *x*, there is the 30 and 60 days law counting from date *x*. And then, she comes here after 30 days. So, the 30 days are gone. As much as we speed up the review of the blade, she does not begin the treatment in 2 months (P1 – oncology service).

Allocation and access are the main obstacles of the HAN, forcing a relative deviation of resources to tertiary attention[10]. Overburdened health systems impact the timely access and meeting determined schedules[28,29] and reveal the necessity of (re) organization of planning and regulation with well-defined flows.

The scenario of access to radiotherapy is different than for chemotherapy and surgery, marked by a fragmented care and delays due to waiting lines:

> She did this same surgery when I did mine, she did in Caruaru. And she is still waiting for radiotherapy, 200 persons awaiting in the queue and she can't come here (user 1 - M2).

> It affects the demand at the state capital. Caruaru does not cover Agreste, but it would be good if it did considering the logistic for the patient [...] Petrolina does not have radiotherapy [...] we receive 40 patients from Petrolina every month, if they stayed there, 'not only breast', *Hospital do Câncer* would not be overburdened, closer to their house [...] Nowadays, Caruaru is even worse than before because they were open up to midnight, one A.M., a new physician would join in, but CNEN decided they had to close at 5 PM, there is this too, Caruaru needs to resume assistance until midnight, it would help (P3 – oncology service).

Pernambuco has deficit of nine linear accelerators (LINACS). The access is uneven and waiting time is high because of insufficient equipment. Of the nine linear accelerators in use in SUS (seven exclusive of SUS), eight are in Recife, the state capital (macro-region I), and one in Caruaru (macro-region II), there are no accelerators in use by SUS in macro-regions III and IV[33]. Studies indicate a tendency of concentration of oncologic services in large cities, but highlight the importance of restructuring the services and expand the access in least underserved regions[32,34]. For each four weeks of delay to begin the oncologic treatment, including radiotherapy, the risk of death increases significantly[35].

One of the narratives emphasized the importance of avoiding the fragmentation in multiple oncologic services.

> Once the treatment begins, I don't think it should be fragmented. She should not be operated here and do chemotherapy in Arcoverde due to the physical distance and because when she is in chemotherapy and has doubts, my team is not in Arcoverde. [...] oncologic treatment needs to be done in the same place (P1 – oncology service).

The lack of comprehensive offer of oncologic services in the macro-regions II, III and IV damages the continuity and integrality of the care. None of the Unacons of the macro-regions II, III and IV offers radiotherapy, some Unacons split all the stages of the treatment in different services, revealing the urgency of more integration[33]. Cancer treatment delays are aggravated if the treatment is out of the macro-region where the user lives. In addition, the geographic fragmentation reduces the adherence to the treatment because the patients need to follow different flows to meet their needs[32]. Although the distance is not the only problem affecting the access to treatment, it is important to address this question to improve equity[32,33,34].

In despite of the 24-hour assistance at Unacon HCP and Cacon IMIP to meet urgency and emergency demands, all the users report difficulty of access because of the distance as shown below:

> I needed assistance due to fever, diarrhea, anaphylactic shock, I had glottic edema, was admitted [...]. Other units do not offer urgency and emergency services as my friends told me (user 1 – M1).

> The doctor said that if I had fever, I should come immediately. But I can't come immediately because there is no transportation (user 1 – M4).

> They said in Arcoverde, 'we provide assistance during the day, not the night'. Closes at 5 PM [...] my son brought me in a hurry because there was no ambulance at the hospital [...] We left at 8 PM and got here at 3:30 AM. Stayed 13 days at the ICU and three days at the ward. It is difficult to come to Recife (user 1 – M3).

The narratives indicate the necessity of oncologic services to offer prompt 24-hour assistance (PA24h) for cases of oncologic urgency out of the working hours. The results show that the macro-regions that do not offer integrated treatment or split the stages of the treatment have provoked the evasion of the users of rural areas that face long distances, delays since suspicion, diagnosis and beginning of the treatment and overburden of the services that offer integrated treatment and 24-hour prompt assistance. The structure and organization are essential to ensure the continuity of the care and overcome the barriers of access.

CONCLUSION

Technological advances of cancer treatment are concomitant with persistent fragmentation of HAN in Pernambuco, which compromises the integrality of the care. The inarticulate organization increases the barriers the women with social and financial difficulties have to face as long transportation times, poor living conditions and dilemma between keeping the treatment and ensure their own survival. In this scenario, the implementation of an organized screening is essential to expand the coverage and monitor asymptomatic women, allowing timely and equitable interventions. However, even with well-structured screening strategies, the timely access to specialized services for diagnostic investigation, evaluation by an expert, imaging exams, biopsy and anatomopathology remains as one of the main challenges. An immediate restructuring of the network with implementation of services, assistance flows aligned with actual needs of the population and enabling already established public policies in the daily practice is critical to overcome this challenge.

The results of this study indicate the necessity of navigation programs and investments in continuous health education to mitigate these barriers through timely and integrated approach. The improvement of inter-services communication, planning of oncologic attention across every level of health attention and standardization of guidelines and practices for organized mammogram screening in SUS are crucial. This will ensure that all the women with suspicious signs and symptoms have access to diagnostic mammograms, regardless of the time range recommended for population screening with qualified exams, effective communication among levels of attention and continuous training of HPA professionals. Additionally, telehealth for integrated medical visits can speed up the follow up, reduce waiting lines and optimize the access to specialists, most of all in remote areas.

This study is the first to apply this methodology in the Northeast region, providing inputs for health professionals and managers. Future investigations can explore other dimensions of the integrality of care focused to the line of care and dimensions of the integral being to support more effective and humanized interventions for breast cancer.

CONTRIBUTIONS

Rosalva Raimundo da Silva and Tereza Maciel Lyra contributed to the conception and design of the study, acquisition, analysis and interpretation of the data, writing and critical review. Mauricéa Maria de Santana, Adriana Falangola Benjamin Bezerra and Jurema Telles de Oliveira Lima contributed to the writing and critical review. All the authors approved the final version for publication.

DECLARATION OF CONFLICT OF INTERESTS

There is no conflict of interests to declare.

DATA AVAILABILITY STATEMENT

All the content underlying the text is contained in the manuscript.

FUNDING SOURCES

Rosalva Raimundo da Silva was awarded a scholarship by the "*Fundação de Amparo à Ciência e Tecnologia do Estado de Pernambuco (FACEPE)*" to conduct the study.

REFERENCES

1. Instituto Nacional de Câncer. Estimativa 2026: incidência de câncer no Brasil. Rio de Janeiro: INCA; 2026.
2. Silva RRD, Lyra TM, Luna CF, et al. Câncer de mama e covid-19: redução no diagnóstico e tratamento em uma unidade hospitalar de Pernambuco. Rev Bras Saúde Mater Infant. 2023;23:1-9. doi: http://dx.doi.org/10.1590/1806-9304202300000326
3. Migowski A, Silva GA, Dias MBK, et al. Diretrizes para detecção precoce do câncer de mama no Brasil. II - Novas recomendações nacionais, principais evidências e controvérsias. Cad Saúde Pública. 2018;34(6):1-16. doi: https://doi.org/10.1590/0102-311X00074817
4. Lana AP, Perelman J, Andrade EIG, et al. Cost analysis of cancer in Brazil: a population-based study of patients treated by public health system from 2001-2015. Value Health Reg Issues 2020;23:137-47. doi: https://doi.org/10.1016/j.vhri.2020.05.008
5. Starfield B. Atenção primária: equilíbrio entre necessidade de saúde, serviços e tecnologia. Brasília, DF: Unesco Ministério da Saúde; 2002.
6. Heller A. Teoría de las necessidades en Marx. Barcelona: Península; 1986.
7. Bousquat A, Giovanella L, Fausto MCR, et al. A atenção primária em regiões de saúde: política, estrutura e organização. Cad Saúde Pública. 2019;35(2):e00099118. doi: https://doi.org/10.1590/0102-311X00099118
8. Goldman RE, Figueiredo EN, Fustinoni SM, et al. Brazilian breast cancer care network: the perspective of health managers. Rev bras enferm. 2019;72(1):274-81. doi: http://dx.doi.org/10.1590/0034-7167-2017-0479
9. Oliveira SB, Soares DA. Acesso ao cuidado do câncer de mama em um município baiano: perspectiva de usuárias, trabalhadores e gestores. Saúde debate. 2020;44(124):169-81. doi: https://doi.org/10.1590/0103-1104202012412
10. Mendes EV. O cuidado das condições crônicas na atenção primária à saúde: o imperativo da consolidação da estratégia da saúde da família [Internet]. Brasília, DF: Organização Pan-Americana da Saúde; 2012 [acesso 2026 abr 14]. Disponível em: https://iris.paho.org/items/7d6251b9-a401-4306-b83b-492e807054fa
11. Mendes EV. O acesso à atenção primária à saúde. Brasília, DF: Conselho Nacional de Secretários de Saúde; 2016.
12. Creswell JW, Creswell JD. Projeto de Pesquisa: métodos qualitativo, quantitativo e misto. Porto Alegre: Penso; 2021.
13. Ministério da Saúde (BR). Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Controle dos cânceres do colo do útero e da mama. 2. ed. Brasília, DF: Editora do Ministério da Saúde; 2013 [acesso 2025 dez 15]. Disponível em: https://bvsms.saude.gov.br/bvs/publicacoes/controle_canceres_colo_utero_2013.pdf
14. Giorgi A. The descriptive phenomenological method in psychology: a modified Husserlian approach. Pittsburgh: Duquesne University Press; 2009.
15. Bardin L. Análise de Conteúdo: tradução Luís Antero Reto, Augusto Pinheiro. São Paulo: Edições; 2011.
16. Conselho Nacional de Saúde (BR). Resolução nº 466 de 12 de dezembro de 2012. Aprova diretrizes e normas regulamentadoras de pesquisas envolvendo seres humanos. Diário Oficial da União, Brasília, DF. 2013 jun 13; Edição 112; Seção 1:59.
17. Sala DCP, Okuno MFP, Taminato M, et al. Breast cancer screening in Primary Health Care in Brazil: a systematic review. Rev Bras Enferm. 2021;74(3):e20200995. doi: https://doi.org/10.1590/0034-7167-2020-0995
18. Santana MM, Medeiros KR, Monken M. Processo de trabalho da Estratégia Saúde da Família na pandemia no Recife-PE: singularidades socioespaciais. Trab educ saúde. 2022;20:1-22. doi: https://doi.org/10.1590/1981-7746-ojs00154
19. Ministério da Saúde (BR) [Internet]. Brasília, DF: Ministério da Saúde; [sem data]. Linhas de Cuidado:

câncer de mama; 2022 [acesso 2023 jun 12]. Disponível em: https://linhasdecuidado.saude.gov.br/portal/cancer-de-mama/

20. Andrade MC, Ribeiro AP, Lanza K, et al. Ações de detecção precoce do câncer de mama no Brasil: análise dos dados do sistema de informação do controle do câncer de mama (sismama), 2009-2015. Rev Bras Cancerol. 2022;68(3):e-082189. doi: https://doi.org/10.32635/2176-9745.RBC.2022v68n3.2189

21. Barcelos MRB, Chalupowski MN, Rebbeck TR, et al. Diretrizes de rastreamento do câncer de mama com práticas personalizadas e baseadas em risco: estamos preparados? Femina. 2020;48(11):685-98.

22. Castro CPD, Sala DCP, Rosa TEDC, et al. Atenção ao câncer de mama a partir da suspeita na atenção primária à saúde nos municípios de São Paulo e Campinas, Brasil. Cien Saude Colet. 2022;27(2):459-70. doi: https://doi.org/10.1590/1413-81232022272.42012020

23. Silva LB, Costa JMB, Duarte MS. Avaliação do desempenho das Unidades Pernambucanas de Atenção Especializada (Upae) tipo II, 2016. Saúde debate. 2018;42(118):618-630. doi: https://doi.org/10.1590/0103-1104201811806

24. Castaldi M, Smiley A, Kechejian K, et al. Disparate access to breast cancer screening and treatment. BMC womens health. 2022;22(1):249. doi: https://doi.org/10.1186/s12905-022-01793-z

25. Cidades [Internet]. Rio de Janeiro: IBGE; 2022. Pernambuco- Recife, censo 2022 [acesso 2024 jan 2]. Disponível em: https://cidades.ibge.gov.br/brasil/pe/panorama

26. Santos R, Ribeiro AR, Marques D. Ultrasound as a method for early diagnosis of breast pathology. J Pers Med. 2023;13(7):1156. doi: https://doi.org/10.3390/jpm13071156

27. Rebolj M, Assi V, Brentnall A, et al. Addition of ultrasound to mammography in the case of dense breast tissue: systematic review and meta-analysis. Br j cancer. 2018;118(12):1559-70. doi: https://doi.org/10.1038/s41416-018-0080-3

28. Presidência da República (BR). Lei nº 12.732, de 22 de novembro de 2012. Dispõe sobre o primeiro tratamento de paciente com neoplasia maligna comprovada e estabelece prazo para seu início. Diário Oficial da União, Brasília, DF. 2012 nov 23; Seção 1.

29. Presidência da República (BR). Lei nº 13.896, de 30 de outubro de 2019. Altera a Lei nº 12.732, de 22 de novembro de 2012, para assegurar a realização de exames relacionados ao diagnóstico de neoplasia maligna no prazo de 30 dias. Diário Oficial da União, Brasília, DF. 2019 out 31; Seção 1.

30. Sousa SMMT, Carvalho MDGFDM, Santos LA, et al. Acesso ao tratamento da mulher com câncer de mama. Saúde debate. 2019;43(122):727-41. doi: https://doi.org/10.1590/0103-1104201912206

31. Zeeshan M, Salam B, Khalid QSB, et al. Diagnostic accuracy of digital mammography in the detection of breast cancer. Cureus. 2018;10(4):e2448. doi: https://doi.org/10.7759/cureus.2448

32. Paula Fonseca B, Albuquerque PC, Freitas Saldanha R, et al. Geographic accessibility to cancer treatment in Brazil: a network analysis. Lancet Reg Health Am. 2022;7:100153. doi: https://doi.org/10.1016/j.lana.2021.100153

33. Silva RR. Avaliação da rede de atenção oncológica de alta complexidade no tratamento de mulheres com câncer de mama no estado de Pernambuco [dissertação]. Recife: Fundação Oswaldo Cruz Instituto, Aggeu Magalhães; 2017.

34. Saldanha RDF, Xavier DR, Carnavalli KDM, et al. Estudo de análise de rede do fluxo de pacientes de câncer de mama no Brasil entre 2014 e 2016. Cad Saúde Pública. 2019;35(7):e00090918. doi: https://doi.org/10.1590/0102-311x00090918

35. Hanna TP, King WD, Thibodeau S, et al. Mortality due to cancer treatment delay: systematic review and meta-analysis. BMJ. 2020;371:4087-98. doi: https://doi.org/10.1136/bmj.m4087

Recebido em 28/10/2025
Aprovado em 11/3/2026

Associate editor: Mario Jorge Sobreira da Silva. Orcid iD: https://orcid.org/0000-0002-0477-8595
Scientific-editor: Anke Bergmann. Orcid iD: https://orcid.org/0000-0002-1972-8777