Original Article

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Implementation of care pathways for chronic conditions in health regions: case studies

Implementação de linhas de cuidado de condições crônicas em regiões de saúde: estudos de casos

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Abstract
Abstract INTRODUCTION: Within the Brazilian Health System, a significant advancement has been the regionalized organization of health planning and service delivery through Health Care Networks (Redes de Atenção à Saúde - RAS). Understanding the organizational arrangements and essential for improving public health policies and the configuration of regional health systems. AIM: To present case studies that used 5W2H tool to develop strategic actions for the implementation of five care pathways for chronic non-communicable conditions recommended by the Ministry of Health, in two health regions of northeastern Brazil. MATERIALS AND METHODS: This study adopts a multiple case study design (two cases) with a qualitative, descriptive, and exploratory approach. The 5W2H tool was used to identify priorities and guide decision-making regarding the definition of intervention plans and main implementation actions. RESULTS: A total of 86 municipal and state managers and technical supporters participated, along with 89 health professionals and civil society representatives. The prioritization problems and actions were organized into the following thematic areas: (1) primary health care; (2) specialized care; (3) hospital care; (4) emergency care; (5) regulation; (6) management. CONCLUSIONS: The 5W2H matrix proved to be an effective methodological strategy for prioritizing actions in planning processes, fostering collective deliberation, promoting integration across management levels, and strengthening clinical governance in the analyzed health regions.
Keywords: Delivery of Health Care; Strategic Planning; Regional Health Planning.

Resumo
INTRODUÇÃO: No âmbito do sistema de saúde brasileiro um avanço importante foi a organização, planejamento e assistência à saúde de forma regionalizada, por meio das Redes de Atenção à Saúde (RAS). A compreensão dos arranjos organizativos e das dinâmicas de implementação das RAS nas diferentes realidades territoriais do país é necessário para aprimorar as políticas de saúde e as estruturas dos sistemas regionais. OBJETIVO: Apresentar estudos de casos que utilizaram a ferramenta 5W2H para a construção de ações estratégicas para a implementação de cinco linhas de cuidado em condições crônicas não transmissíveis, preconizadas pelo Ministério da Saúde, em duas regiões de saúde do Nordeste brasileiro. MATERIAIS E MÉTODOS: Trata-se de um estudo de dois casos com abordagem qualitativa, descritiva e exploratória. A ferramenta 5W2H foi utilizada para elencar prioridades e apoiar a tomada de decisão na definição dos planos de intervenção e das principais ações de implementação. RESULTADOS: participaram 86 gestores municipais, estaduais e apoiadores, além de 89 profissionais dos serviços de saúde e representantes da sociedade civil. As ações priorizadas foram organizadas em seis eixos temáticos: (1) atenção primária à saúde; (2) atenção especializada; (3) atenção hospitalar; (4) urgências e emergências; (5) regulação; (6) gestão. CONCLUSÕES: A matriz 5W2H mostrou-se uma estratégia metodológica efetiva para a priorização no planejamento das ações, favorecendo a deliberação coletiva, a integração entre os níveis de gestão e o fortalecimento da gestão clínica nas regiões de saúde analisadas.
Palavras-chave: Atenção à Saúde; Planejamento Estratégico; Regionalização da Saúde.

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Introduction

Within the Unified Health System (SUS), a significant advance has been the implementation of regionalization in the organization and delivery of health. Health regions are designed to provide a comprehensive range of services and interventions in order to meet the needs of the population in an integrated manner, through articulation in Health Care Networks (RAS). [1]

The RAS and care pathways for users with chronic non-communicable diseases (NCDs) have shown important advances in Brazil, especially regarding the expansion of services and improved access to Primary Health Care (PHC). However, these advances have also revealed weaknesses in the organization of services in health regions. The lack of integration and formal mechanisms between services and health professionals, weaknesses in the consolidation of regionalized networks, and difficulties in accessing various points of the RAS across the country are identified as the main challenges in the organization of the RAS. The fragmentation of care leads users to seek health services that respond immediate to their needs, even if this is often inconsistent with the care pathway agreed upon in regional planning. [2]

In recent years, healthcare management has increasingly adopted strategic tools that support improved planning and decision-making. Aligned with this trend, healthcare managers, along with healthcare professionals and representatives of civil society, have been mobilizing to anticipate problems and develop feasible strategies and context-sensitive scenarios. The need to develop new health strategies or programs promotes and encourages different forms of collaboration among the actors involved to achieve better healthcare outcomes and evidence-informed decision-making.[3]

A notable example of the importance of strategic planning is evidenced in the transformation of Turkey's healthcare system. This process was considered successful due to a comprehensive restructuring of the sector's management, characterized by equitable attention to the implementation, monitoring, and evaluation phases. The study also highlights the central role of institutional leadership and political support, without which the implementation of the reforms might not have been possible.[4]

A thorough understanding of the arrangements and dynamics of Health Care Networks (HCNs) in the different realities of the country necessitates knowledge of the organization of the health system and the health policies implemented for each region. Thus, in distinct socio-spatial realities (regions) and configurations of health systems, similar and distinct conditions for the implementation of care pathways emerge. The aim of this article is to present case studies that used a tool for constructing strategic actions, aiming to understand the contexts of regional health systems for the implementation of five care pathways for NCDs recommended by the Ministry of Health, in two health regions in northeastern Brazil. Specifically, as a secondary aim, we will present the main results of the implementation using the actions identified by this tool.

Materials and methods

Sample and type of study

This study adopts a multiple case study design involving two cases. The case study methodological strategy was selected as a method to describe a situation or to understand how and why events occur. A two-case study was chosen because it has the advantage of a greater analytical generalization of results compared to a single-case study.[5]

Research design

This study was conducted as part of the project "Strengthening Healthcare Networks through support for the implementation of care pathways for overweight and obesity (SO), type 2 diabetes mellitus (DM), systemic arterial hypertension (HAS), stroke (AVC), and acute myocardial infarction (IAM)"- FortaleceRAS, developed by Hcor - Associação Beneficente Síria, in partnership with the General Coordination for the Prevention of Chronic Conditions in Primary Healthcare of the Ministry of Health, the National Council of Health Secretaries (CONASS), and the National Council of Municipal Health Secretariats (CONASEMS), through the Program to Support the Institutional Development of the Unified Health System (PROADI-SUS) between 2021 and 2023. The overall objective of the project was to support the implementation of care pathways at different points of care within the healthcare network.

Inclusion and Exclusion Criteria

The criteria for selecting the health regions were: (1) having medium and large-sized hospitals, according to the classification of the Ministry of Health; (2) registering, since 2019, at least 200 hospitalizations related to NCDs per year; (3) performing bariatric surgeries from 2019 onwards; (4) performing myocardial revascularization surgeries from 2019 onwards; (5) performing primary coronary angioplasty from 2019 onwards. Based on these criteria, two health regions were selected from the 438 existing in the country: the 1st Health Region - Mata Atlântica - Paraíba (1RSPB), composed of fourteen municipalities, and the 7th Health Region - Metropolitan Natal, in Rio Grande do Norte (7RSRN), composed of five municipalities.

Procedures

Strategic planning activities were carried out between November and December 2021 in João Pessoa, Paraíba (PB), and in June 2022 in Natal, Rio Grande do Norte (RN). The workshops included the participation of representatives from all municipalities in the health regions, including members of civil society, administrative technicians, professionals, and managers of health services. To minimize potential constraints in interprofessional relations, the program was structured over two days: the first was directed to municipal administrative technicians and managers, and the second was reserved for health service professionals and representatives of civil society. Participants were proportionally distributed into six groups, ensuring representation from different municipalities in each group, in order to capture the plurality of participants' experiences.

The program followed a similar structure on both days of the workshops and was based on the 5W2H tool and the 6.3.5 technique adapted from brainstorming. [6] The 5W2H tool was used to help systematize each participant's ideas in order to detail and map the actions necessary for implementation. The five "W"s and two "H"s correspond to key questions to be addressed by participants: What? Why? Where? When? Who? How? How much? [6] For this activity, it was decided to adapt this tool in order to facilitate the dynamics and understanding of the participants in relation to the expected content in each item (Table 1).

Table 1. 5W2H Matrix adapted for project activities. São Paulo, 2023.

What's the problem?	Why does the problem exist?	Where is the problem?	How do we solve the problem?	Who are the main actors?	What is the timeframe of the action?	Will investment be necessary?	Priority

Source: Author's own elaboration.

To address situations that interfere with the care pathways of the RAS, six thematic stations were established aligned with the main points of attention in the RAS: (1) primary health care; (2) specialized care; (3) hospital care; (4) emergency care; (5) regulation; (6) management. At each station, a matrix using the 5W2H tool was provided, along with a facilitator to guide the discussions. Each group had 40 minutes to discuss each station, going through all of them sequentially. At the last station, participants summarized the matrix to present the collective construction developed at each station, relating to the points of attention.

The 5W2H matrices were transcribed, preserving the originality of their formats and content. The material explored is comprehensive, allowing for analysis from various thematic perspectives. To synthesize the findings and ensure data quality, a content analysis was performed, maintaining the categorization of the points of attention of the Health Care Network. The transcribed material served as the basis for the elaboration of the document with the implementation actions for the five lines of care in the two health regions.

Regarding risks and discomforts, this study may cause unease in revealing information about health services. However, the information and results will be analyzed and released in aggregate form to ensure confidentiality and anonymity. All municipalities in the health region signed the cooperation and adherence agreement to the FortaleceRAS project before the start of activities.

Results

In both regions, a total of 86 (N= 47 PB + 39 RN) municipal and state managers and supporters participated, in addition to 89 (N= 40 PB + 49 RN) health service professionals and representatives of civil society. Using the 5W2H tool, employed for mapping and prioritizing strategic components, the main results were identified and systematized in each of the six established thematic stations (Table 2).

Table 2. Compact 5W2H Matrices - Paraíba and Rio Grande do Norte. São Paulo, 2023.

Management		
5W2H	**Paraíba**	**Rio Grande do Norte**
What	Outdated PPI (Program for the Improvement of Institutional Policies); fragmentation of the network; lack of resource management; lack of continuing education.	Disorganized work processes, difficulty in collecting and monitoring indicators, high staff turnover, litigation regarding medications.
Why	Network fragmentation; underfunding; lack of coordination and planning.	Network fragmentation, difficulty in understanding the reality, precarious management.
Where	In municipal and state management; throughout the entire RAS.	Media, municipal and state management, poorly managed and monitored contracts.
When	Immediate start, goals within 6 months to the medium term.	Immediate start, but long-term.
Who	Municipal and state managers, technical and multidisciplinary teams.	Municipal and state managers, health professionals, and users.
How	Workshops, agreement on workflows, team training, document updates (PPI/PRI).	Institutionalization of the process, permanent dialogue forums, construction of care pathway workflows, improved contract management.
How Much	Investment in training, transportation, food, basic infrastructure.	Investment in training, teaching materials, computerization, internal communication.
Regulation		
What	Structuring state regulations, a single queue, protocols, and queue transparency.	Structuring regulations, protocols, a queue based on user needs, and queue transparency.
Why	Fragmentation, lack of regulatory complexes, lack of knowledge of queues and flows.	Fragmentation, lack of regulatory complexes, lack of knowledge of queues, demands and flows, lack of professionals in bed regulation.
Where	Regulatory Centers (NIR), hospitals, regulatory centers.	Health services, regulatory centers.
When	Short to medium term (urgent actions to be initiated).	Medium and long term.
Who	State, municipalities, management of the RAS, regulatory professionals.	State, municipalities, management of the RAS, regulatory professionals.
How	Formal agreement, training, risk stratification protocols, integrated systems.	Formal agreement, unification of the referral flow, training, risk stratification protocols, integrated systems.
How Much	Primarily human resources and technology (equipment/systems).	Primarily human resources and technology (equipment/systems).
Primary Health Care		
What	Strengthen PHC as an entry point and problem-solving capacity; monitor protocols.	Strengthen PHC in the management of obesity, considering it a public health problem.
Why	Lack of triage, weak counter-referral, low resolution rate.	Lack of awareness among professionals about the importance of identifying the problem; Lack of ongoing education focused on the topic.
Where	Primary Health Care Units (PHCUs) and network coordination.	Primary Health Care Units (PHCUs).
When	Immediate start, medium-term implementation (6 months to 1 year).	Immediate start, medium-term implementation (6 months to 1 year).

Who	Primary Health Care team, managers, Community Health Agents, health professionals.	Primary Health Care team, managers, Community Health Agents, health professionals.
How	Ongoing education, triage flows, improved communication, encouragement of primary health care-network integration.	Ongoing education, encouragement of primary health care-network integration, strengthening management in the implementation of obesity care in primary health care.
How Much	Investments in courses, workshops, computerization, and basic infrastructure.	Investments in courses and workshops.
Specialized Care		
What	Improve access to and qualification of specialized care; integrate primary health care and specialized care; standardize protocols.	Strengthen the network of specialties, structure counter-referral and teleconsultation.
Why	Inadequate referrals; low availability of specialties; communication failures.	High unmet demand, non-existent flows between primary and specialized care, low resolution rates.
Where	Specialized care, health units and hospital network.	Specialty units, regional centers, hospital network.
When	Short to medium term (actions within 6 months to 1 year).	Short to medium term.
Who	SES, municipal secretariats, APS, AE, CRM, users.	SES, municipal secretariats, consortium management and the regional office.
How	To agree on regional flows, create protocols, intermunicipal consortia, improve structure and teams.	To establish regional consortia, integrated protocols, expand teleconsultation and continuing education.
How Much	Human resources, equipment, medical supplies.	Resources for hiring specialists, structuring specialty centers, and investing in telehealth.
Emergency Care		
What	Strengthen the emergency network; implement risk protocols; improve access to examinations; accelerate transport and thrombolysis.	Improve risk classification, expand care capacity, and ensure stroke/MI care protocols.
Why	Overcrowding, long response times, lack of infrastructure and integration.	High demand for non-urgent cases, inadequate flow, absence of proper clinical management.
Where	UPA (Emergency Care Unit), emergency room, hospital network, primary health care.	UPAs, hospitals, regional emergency network.
When	Immediate and continuous.	Immediate for workflows, continuous for training.
Who	Network professionals, managers, users.	State and municipal management, emergency professionals, support teams.
How	Ongoing training, reception and thrombolysis protocols, improved transport and examinations.	Training for emergency management (thrombolysis), structuring care flows, and expanding diagnostic support in units.
How Much	Human resources, supplies, equipment, ambulances.	Equipment, supplies, advanced support ambulances, and investments in training.
Hospital Care		

What	Improve hospital regulation, computerize systems, implement protocols for stroke/MI, increase hospital capacity.	Improve bed management, support infrastructure, computerize hospitals, and organize counter-referrals.
Why	Shortage of available beds, lack of early thrombolysis, disorganization of hospital discharge and referral procedures.	Long patient stays, transportation difficulties, hospital overcrowding, low adherence to protocols.
Where	Reference hospitals and general hospital network.	Regional hospitals, UPAs (Emergency Care Units), intermunicipal referral system.
When	Medium term with immediate actions.	Short and medium term, with ongoing continuity.
Who	Hospital management, municipal and state levels, professionals, population.	Hospital directors, state and municipal managers, surveillance team and bed management.
How	Update workflows, train teams, invest in technology, create new benchmarks.	Implement computerized bed management, create a hospital discharge team, and establish workflow protocols between services.
How Much	Medical equipment, qualified personnel, thrombolytics, hospital maintenance.	Specialized HR, medical equipment, hospital maintenance and technological infrastructure.

In both regions, the absence of cardiovascular risk stratification emerged as one of the main challenges faced in the context of PHC. This issue was associated with the lack of standardized clinical protocols, high staff turnover in the services and the high workload among nursing teams. These factors directly compromise the role of PHC, hindering screening, long-term monitoring of the population's health needs, and the effectiveness in resolving problems. To address this issue, professionals highlighted the need to institutionalize risk stratification as a goal, train teams to improve population screening, and strengthen active case finding actions in the territory.

Strengthening strategies is essential to reduce staff turnover in primary health care, as this impacts the planning and execution of actions by PHC units in addressing the population's health needs. The proposed solution was the implementation of measures that encourage professionals to remain in health services, such as improvements in remuneration, periodic public recruitment processes, and the creation of structured career plans within the healthcare network.

In the context of specialized care, limited access to specialist consultations in outpatient clinics for users in both health regions was highlighted, particularly in cardiology, endocrinology, neurology, and vascular surgery, due to long waiting lists. According to professionals and managers, several factors contribute to this issue: the low number of specialists in the territories; the high demand for inappropriate referrals to specialists; the absence of defined criteria; the scarcity of attractive job openings with good working conditions and salaries; and the lack of incentives for specialist training.

To address this problem, proposed solutions included strengthening PHC and expanding the disseminating of information about its available resources, such as teleconsultations and matrix support processes. Furthermore, expanding the availability and improving the working conditions of medical specialists is recommended, including the implementation of intermunicipal and regional consortia and agreements. Organizing care flows within health regions, as well as strengthening referral and counter-referral mechanisms, were also

identified as important measures for strengthening PHC.

According to the participants, these factors impact the continuity of care for users in the RAS, a problem highlighted at all levels of healthcare. The main difficulty identified was the lack of effective communication between levels of care, attributed to the lack of standardization of a regional protocol for referral and counter-referral, as well as the absence of an integrated electronic medical record in the RAS. As a short-term solution, professionals suggested the development of a referral and counter-referral instrument based on a unified and agreed-upon protocol for the entire health region.

To address the difficulties identified, participants reported the need for integration and coordination between municipal, state, and federal administrations, health teams, and professional class councils. In the specific context of Rio Grande do Norte, they highlighted the importance of regulating the management of the SUS and the private sector.

Regarding emergency and urgent care services, one of the problems identified in both health regions is the high demand for low-complexity care. This situation is related to the population's difficulty in understanding how the RAS works, as well as the limitations of PHC in meeting the demand, whether due to limited hours or the absence and turnover of health professionals. According to the participants, possible solutions include training PHC professionals and users to better understand the demands of each level of care, extending the operating hours of PHC services, and defining flows for emergency hiring of professionals.

The difficulty in using thrombolytics for patients with signs of acute myocardial infarction in Emergency Care Units (UPAs) and hospitals, before admission to a referral service, was also identified as a relevant problem in both health regions. The likely causes identified include the difficulty in acquiring thrombolytics, the absence of a specific clinical protocol for their management, the low adherence of professionals to the use of this therapy, and the absence of central regulation for these cases. Among the possible solutions, awareness and training of professionals in the Health Care Network, regular acquisition of thrombolytics, and the development of a standardized clinical protocol stand out as strategies considered most feasible.

In both health regions, long hospital stays of users in emergency services were identified, attributed to the low availability of hospital beds, the absence of criteria for hospital discharge, difficulties related to sanitary transport, delays or difficulty in accessing complementary exams, and the high demand faced by regulatory services. Among the possible solutions to this problem, the standardization of clinical procedures among all professionals in the healthcare network and the definition of a central role in bed allocation stand out.

Regarding monitoring, representatives from both health regions identified the absence of care and management indicators in emergency and hospital care services, attributing this gap to the lack of electronic medical records and the lack of qualified management. To address this problem, the use of existing information systems and investments in the unification of electronic medical records among other services of the RAS were suggested.

High hospital admission rates were also observed in both health regions. Among the possible causes, the absence of clinical management and the absence of specialist physicians stand out. Proposed strategies included expanding outpatient specialized care and increasing hospital bed capacity.

At all levels of care, structural problems were also identified, such as: precarious physical infrastructure; predominant use of physical medical records by many services; lack of

integration between electronic medical records in the network; difficulty in collecting and monitoring population indicators; and tracking users in the network. In this sense, the following were proposed as viable solutions: updating the Agreed and Integrated Programming (PPI) and integrating and coordinating municipal, state, and federal management.

Discussion

The two cases provided sufficient analytical replication to understand the general phenomenon of planning and supporting the implementation of actions across the five lines of care in the RAS in two health regions in Brazil. These studies demonstrated that strategic planning plays a facilitating role in knowledge sharing and goal setting, promoting team alignment in care strategies for users with NCDs in RAS services, as was done during health emergencies such as the COVID-19 pandemic[7] Our findings corroborate Mendes[8], who highlights that the effectiveness of RAS depends on the capacity for planning and coordination among different points of care, reaffirming the importance of clear and collaborative strategies to ensure agile and integrated responses to the needs of the population.

The application of the 5W2H tool has demonstrated its viability in different contexts, such as in the development of a biobank, in order to prioritize and guide decision-making regarding the definition of the action plan and the evaluation of costs. [9] In our study, the tool was used to analyze governmental relations and their spheres of municipal, state, and regional representation, as well as the structural capacities of the RAS and its organizational designs. Furthermore, it presented a description of the necessary interventions and how each component of the RAS should contribute to the implementation process of care pathways for NCDs in the context of health regions. The division of participants into groups of managers and health professionals also played a fundamental role in this collaborative process, producing perspectives and experiences capable of identifying actions for health planning at the regional level. This methodological strategy is aligned with the discussions proposed by Mendes[8] and Starfield[10], who emphasize the relevance of collaborative governance and primary health care as structuring elements of health systems.

In the 1RSPB and 7RSRN, the participation of key actors was of fundamental importance for the shared realization and organization of actions centered on social, population, and individual needs within the context of the RAS and its care pathways. However, despite the progress observed with the implementation of actions such a cardiovascular risk stratification, clinical protocols, and referral and counter-referral instruments, many systemic challenges remain to be faced in order to guarantee integrated care across the various points of the RAS. Among these challenges are the insufficient network of health services and the lack of inclusion of health professionals and users in the decision making process, in line with other studies.[11, 12] This study corroborates the findings of previous research[10,13,14] which also highlighted the difficulty of accessing specialized care services, in addition to the disarticulation of care with primary care.

The problems identified in the two health regions may be associated with the organization of the health system, evidenced by long waiting lists for consultations, delays in accessing and obtaining test results, and users' difficulties in understanding the profile of the services. Furthermore, structural problems, such as physical medical records and poor service infrastructure, were also identified as significant issues. These results are consistent with the main findings of regional studies conducted in Colombia, which observed structural and organizational limitations, mainly related to health equipment.[15] These similarities

highlight common structural challenges faced by health systems in different Latin American regional contexts, requiring strategies to strengthen infrastructure and regional governance.

Integrated regional planning is of fundamental importance for the organization of the RAS. The Ministry of Health, CONASS and CONASEMS corroborate the need for the development of regional plans that describe not only the health situation in the territory, the health needs of the population and the installed capacity, but also the organization of the RAS points of care and the general programming of health actions and services.[16] This approach aims to strengthen regional integration, optimize the use of resources and guarantee the continuity and comprehensiveness of care in the territory.

The organization of the RAS depends not only on articulate institutional leadership, but also on the active engagement of health professionals as agents of change. High staff turnover compromises the bond with services and users, negatively impacting the continuity and quality of care in the health system, as the connection with services is not clear[2,17], affecting the coordination of care and the transmission of essential information to ensure adequate and continuous treatment for patients. Strategies for building relationships and valuing professionals are fundamental for consolidating more efficient and effective regional care networks.[11]

Given this scenario and considering the challenges and their implications, it is essential that the RAS adopt a consistent model for retaining health professionals. Beidacki et al.[17] proposed a model that includes strategic factors such as adequate staffing levels; ensuring appropriate infrastructure; offering competitive remuneration in the job market; structuring a career plan; promoting a favorable organizational environment with good internal communication; implementing continuous training and development programs for health professionals; and finally, social, family, and community support.[17]

In this sense, the identification of problems and the development of strategic actions, based on the 5W2H matrix and participatory workshops, supported the development of regional intervention plans in the two health regions. These plans were subsequently approved by the respective Regional Inter-managerial Commissions (CIR)[18,19] Commission (CIB)[20] and agreed upon in the Bipartite Inter-managerial, in accordance with the nationally recommended standard.[16]

This process of constructing the intervention plans also supported the prioritization of actions in the territories for the implementation of care pathways throughout 2023. In both health regions, a similarity of priority proposals and strategies at the regional level was observed. The development and implementation of the cardiovascular risk stratification instrument for primary health care services[21-23] stand out, as well as the creation of the patient referral and counter-referral instrument[21-23] between the different levels of care in the health care network. Furthermore, care and flow protocols were implemented in the care pathways for acute myocardial infarction (IAM)[22] and stroke (AVC).

The organization of these priority actions aims to establish an articulated functioning between services, guiding professionals regarding clinical management, communication between multidisciplinary teams, and the care pathway, in order to enable comprehensive, continuous, and effective care for users.[18] The need for awareness, training, and implementation is highlighted, not only through regulations, but effectively in the daily routine of health services, especially for primary care physicians, emphasizing the importance of clinical coordination mechanisms and the strengthening of care pathways.[24,25]

The results of these case studies, using the 5W2H tool in the two health regions, indicated important prioritizations of actions and processes for the implementation of the five care pathways related to the main NCDs. Our study identified the relevance of regional units throughout the action implementation process. As with the study by Tanaka et al.[26] conducted in four other health regions, we highlight the importance of state managers[26]. This scenario contrasts with the results found by Santos and Giovanella[13], in another health region in northeastern Brazil, where regionalization has shown a decline, a fact associated with the weak clinical management of primary care. These comparisons highlight the significant influence of different contexts and management approaches on the effectiveness of implementing regionalized health policies.

It is important to highlight that, among the limitations of our case studies, are the instability in the political and epidemiological landscape. The former is due to the constant changes in municipal and regional managers, which required constant renegotiations for the implementation of planned actions. And the latter factor is related to the start of activities in the midst of the SARS-CoV-2 pandemic, which imposed the adoption of activities in a virtual format. Political volatility and adverse epidemiological conditions represent important aspects to be considered in the results and in the formulation of recommendations for future interventions. However, it is important to note that the end of the pandemic during the final stage of the case studies represented a significant context for the resumption of collective activities and actions to prevent NCDs. During the SARS-CoV-2 pandemic, these activities were relegated to the background due to the urgent public health demands related to COVID-19. This period, however, also provided an opportunity to prioritize NCD prevention and control initiatives again in the 1RSPB and 7RSRN.

Conclusion

The findings demonstrate that the tool used was effective in prioritizing the planning of actions, as well as the continuous and relevant participation of managers throughout the process. Furthermore, it highlights the strong engagement of healthcare professionals in improving clinical management. The two case studies describe important resources for scaling the implementation of actions in care pathways, in addition to ensuring the continuity of activities following the regional planning proposed in the health regions.

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