



Aligning Specialized Care with Primary Health Care: in search of comprehensive care for asthma patients in Brazil

Aproximando a Atenção Especializada da Atenção Primária à Saúde: em busca do cuidado integral ao paciente com asma no Brasil

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ABSTRACT

Allergic diseases and asthma are on the rise in many countries. Data show that approximately 25% of the inhabitants of industrialized countries have some type of allergy, reaching even greater proportions in developing countries. Although a national health care agenda for patients with allergies and asthma has not yet been developed in Brazil, individual initiatives in different regions have benefited thousands of patients in recent decades. The main objectives of these programs are to improve health care, quality of life (especially for patients with asthma and allergic rhinitis), and reduce disease-related morbidity and mortality indicators. To this end, these programs have been engaged in health education actions, professional training, performing active searches to ensure timely diagnosis and treatment, and providing free and continuous access to medication. However, due to the non-institutional character of these programs, universal access, evidence-based actions, and continuity of care are not guaranteed, and it is difficult to provide comprehensive care for asthma and other allergic diseases.

Keywords: Asthma, primary health care, health care levels, comprehensive health care, allergy and immunology.

RESUMO

A ocorrência de doenças alérgicas e asma ainda cresce em muitos países. Dados mostram que aproximadamente um quarto dos habitantes de países industrializados apresenta algum tipo de alergia, e nos países em desenvolvimento estas doenças podem alcançar proporções ainda maiores da população. No Brasil, embora não exista até o momento uma agenda política nacional de atenção à saúde dos pacientes com alergias e asma, iniciativas individuais em diferentes regiões têm beneficiado milhares de pacientes ao longo das últimas décadas. Estes programas têm como principais objetivos qualificar o cuidado em saúde, melhorar a qualidade de vida (especialmente dos pacientes com asma e rinite alérgica) e reduzir os indicadores de morbimortalidade relacionados às doenças. Com essa finalidade, os programas vêm se ocupando de diversas ações de educação em saúde, capacitação profissional, busca ativa para garantir diagnóstico e tratamento oportuno, e proporcionar acesso a medicamentos de forma gratuita e continuada. Entretanto, a falta de um caráter institucional que garanta o acesso universal a ações cientificamente fundamentadas, impede a equidade e a continuidade do cuidado, além de dificultar a atenção integral em asma e em outras doenças alérgicas.

Descritores: Asma, atenção primária à saúde, atenção à saúde, assistência integral à saúde, alergia e imunologia.

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Illustrative clinical case

A 29-year-old man entered a Family Health Unit requesting an appointment because his asthma inhaler was no longer working. He reported that his family had recently moved to the area and he would like to be treated at this unit because he could not afford private care. He reported that there was no Family Health Unit where he used to live, and so he never had follow-up treatment. During the consultation, he reported having asthma since childhood, but the diagnosis was only confirmed when he was 18 years old. Whenever he had symptoms, he went to the emergency department and was given aerosolized medication for relief, with oral corticosteroids occasionally being prescribed for home use. He never took allergy tests, but at the time of diagnosis he underwent chest x-rays and spirometry, with normal results. He denied previous hospitalizations for asthma, but reported spending a whole day in the emergency department being medicated and waiting to get better. He reported consistently using salbutamol 1 to 2 times a month for symptom relief, but noticed progressive worsening over the last year, requiring more medication to recover for just a few hours. About 15 days ago, his cough and wheezing got worse, and he began using salbutamol at least twice a day. Performing daily activities left him increasingly tired and he woke up twice at night during this period due to symptoms. He also reported that he has not been able to play soccer with his friends each week like he used to.

During the consultation, the patient was anxious but in good general condition, afebrile, and slightly tachypneic (RR = 28 bpm, HR = 96 bpm, BP 128/89 mmHg), without intercostal indrawing or other signs of respiratory effort, with diffuse wheezing, and without difficulty speaking. His peak expiratory flow was 30% lower than predicted values for his height and age. He reported having used salbutamol twice less than 2 hours before the consultation.

At the end of the clinical evaluation, the physician confirmed that the patient's asthma was uncontrolled and untreated. He prescribed oral corticosteroids for 7 days and advised using albuterol on a daily basis. The treatment strategy was continuous anti-inflammatory action with beclomethasone spray (hydrofluoroalkane propellant), using salbutamol for symptom relief and as a rescue plan for worsening symptoms. The physician also considered it important to test lung function and allergic sensitization, for which the patient was referred to secondary care, where the tests would be requested and performed. A form was filled out

describing the patient's condition and explaining the reason for the referral. Clinical reassessment was scheduled 7 days later. At the end of the consultation, the doctor informed the patient that from now on, regular follow-up visits would be scheduled and that he should feel free to return to the unit if he had any additional problems.

About the case

The case describes a young Brazilian public health system user with asthma who visited a Family Health Unit close to his new residence, a preferential access point for health services (first contact, territorialization, and regionalization of services). He was not undergoing treatment because there was no Family Health Unit in his previous neighborhood (low Family Health Strategy coverage). Since he could not pay for private health care, he never received disease control (impaired access) seeking emergency treatment when symptoms worsened (fragmented care). He sought out a Family Health Unit near his new residence, his complaints were assessed, and he was advised to wait for care (universal coverage, acceptance with risk stratification).

During the consultation, the clinical diagnosis and symptom control were evaluated, and anti-inflammatory treatment was initiated, optimizing management. Beclomethasone and salbutamol were selected because, on a local level, they are available free of charge to Primary Health Care (PHC) users. The Global Initiative for Asthma's 2021 guideline update highlights the benefits of inhaled corticosteroids and the risks of isolated use of short-acting β_2 -agonists, recommending a combination of inhaled corticosteroids and formoterol as a rescue medication even for mild asthma. However, it points out that the recommendations can be adapted to local circumstances, especially regarding locally available medications.¹ That is how the unit's physician proceeded. In the Brazilian public health system, other inhaled corticosteroids and long-acting bronchodilators are only available to patients who receive specialized care (a specialized form of pharmaceutical assistance in the Unified Health System). The Global Initiative against Asthma has just released a new publication aimed specifically at free primary health care systems.²

The patient was also referred to Allergy and Pulmonology specialties for specific tests (hierarchization and comprehensive care), since some

specialized tests are not available for PHC in the Unified Health System. At the end of the consultation, the patient received a written plan about how to proceed in case of worsening symptoms. From that point on, all his health needs would be monitored through that unit (assignment and long-term care), including the reassessment of the current condition 7 days after starting the prescribed medications. Although this is a case report, it represents the experience of thousands of patients with asthma and other allergies in Brazil, who receive a late diagnosis, fragmented care, and are waiting for a national agenda that guarantees comprehensive and universal health care wherever they are.

Comprehensive health care in Brazil

For many years, access to public health care in Brazil was guaranteed only to people who were formally employed. For the rest of the population, medical assistance was provided through direct payouts to private or charitable health services.³ With the creation of the Unified Health System in 1989, curative and rehabilitative health care, health promotion, and disease prevention were made available indiscriminately to the entire population, meeting health needs in accordance with the principles of universality, comprehensiveness, and equity³ (Table 1).

Since then, Brazil's morbidity and mortality indicators have changed substantially. Some authors attribute this phenomenon to better living conditions, health care quality, and accelerated change in the demographic profile of the population. The country is currently experiencing overlapping epidemiological events, a complex situation characterized by:

- goals for controlling and reducing infectious diseases, malnutrition, and reproductive health problems;
- increased mortality due to external causes;
- a concomitant increase in major chronic diseases and their risk factors (smoking, overweight and obesity, sedentary lifestyle, stress, and inadequate nutrition).⁴

To deal with this triple disease burden, PHC was defined as the health care model and the Family Health Strategy was to integrate PHC into the public health system according to World Health Organization recommendations.⁵ For care to be regionalized and comprehensive, it was determined that the

different components of the health system should be reorganized according to the Health Care Network (HCN) model. In this model, health professionals and patients act and transit, respectively, through a polyarchic system of services coordinated by the PHC/Family Health Strategy, to which patients must return for long-term follow-up.⁶

Comprehensive asthma care

A specific national policy to combat asthma has not yet been implemented in Brazil. Other allergic diseases, such as anaphylaxis, drug and food allergies, urticaria and angioedema are also awaiting recognition and resources. In recent years there has been a significant increase in the prevalence of allergic diseases worldwide, which has had severe social and economic consequences. Approximately 25% of people living in industrialized countries have some type of allergy. Allergic rhinitis, asthma, atopic dermatitis, chronic rhinosinusitis, allergic conjunctivitis and/or food allergy have also been affecting more and more people in low- and middle-income countries, such as Brazil, where the repercussions are even greater due to scarce resources.⁷ Although hospitalizations and mortality rates are decreasing in some regions of the country, data from a recent study showed unsafe levels of symptom control (12.3%) and treatment adherence (32%) among Brazilians with asthma.⁸

Despite the lack of resources, asthma is the allergic disease that has received the greatest attention from the public authorities due to its high morbidity and mortality, recognized as unacceptable in current times. In August 2021, the Clinical Protocol and Therapeutic Guidelines for asthma were approved to regulate access to health care and asthma medications,⁹ ensuring more accurate diagnosis and treatment. Recently, the Ministry of Health, through the Secretary of Primary Health Care, in partnership with the Institute for Health Technology Assessment, designed and implemented the Asthma Care Line to expand access, organize patient flow between HCN units and improve care quality, seeking to achieve comprehensive care.¹⁰

Two pieces of legislation have been fundamental for including asthma treatment in Brazilian public health care. The first was the Ministry of Health's National Drug Policy, which provides free access to certain asthma medications, such as beclomethasone, fenoterol, and salbutamol. This especially favored patients with milder conditions, whose symptoms,

Table 1
Fundamental and organizational principles of the Unified Health System

Unified Health System	Definition
Fundamental principles	Universality Health as a universal human right, guaranteeing access to health services and actions
	Comprehensiveness Meeting all the health needs of the population: preventive, curative, and rehabilitative
	Equity Providing services according to the needs of each community
Organizational principles	Regionalization Distributing services and actions throughout the territory, bringing them closer to those who need them the most and making them more efficient
	Hierarchy Providing services at increasing levels of technological complexity according to each case
	Decentralization Redistributing decision-making power, resources, and jurisdiction among the 3 branches of government

despite being less intense, worsened often, and thus were hospitalized at the same frequency as patients with severe asthma.¹¹ This group benefited the most from PHC follow-up.¹² The second legislative milestone was an ordinance determining the creation of therapeutic guidelines and clinical protocols for severe asthma, creating access to medications such as budesonide, formoterol, fluticasone and salmeterol, which favored specialized treatment for these patients.¹³

A little over a decade ago, a national plan was developed for chronic diseases.¹⁴ It has recently been updated for the next 8 years (Non-communicable Chronic Disease Plan 2021-2030), determining strategic actions regarding non-communicable diseases prevalent in the country. Cardiovascular diseases, cancer, diabetes mellitus, and chronic respiratory diseases are included in this plan, including asthma and other conditions such as chronic obstructive pulmonary disease, chronic cough, obstructive sleep apnea, dyspnea, and pulmonary nodules.¹⁵ Despite being included in both versions

of the plans, asthma was neither highlighted nor prioritized, even in the current scenario of increasing allergic diseases, an important group of chronic diseases that have been treated in a fragmented and uneven way.¹⁶

“The First Brazilian Consensus on Asthma Education” was published 25 years ago, the result of joint work by pulmonology, allergy, and pediatrics societies. This important initiative by medical specialties laid the foundations for asthma treatment programs, whose goals include: empowering patients with information about asthma, guiding them towards self-care and encouraging family involvement in the treatment plan; training professionals to properly treat the disease; lowering asthma morbidity and mortality indicators, while respecting the cultural, social, and economic aspects of the target population.¹⁷

At that time, as a result of joint effort between the newly created programs and specialty societies together with the public sector, the National Asthma Control Plan was drawn up to institutionalize assistance to patients with asthma, thus guaranteeing

access to free comprehensive care and a continuous supply of medication.¹⁷ Although the National Asthma Control Plan was not implemented as expected, it served as a point of reference for other programs and initiatives throughout the country, which began offering specialized care for asthma and allergic rhinitis¹⁸ (Table 2). Since then, some initiatives have been discontinued, while others have been strengthened and consolidated.¹⁸

Among many successful initiatives, 3 programs stand out for asthma care quality and for reducing asthma-related morbidity and mortality indicators in their regions. The Programa Criança que Chia (Wheezing Child Program) was developed in response to a study conducted in 1994 and 1995 in Belo Horizonte, MG. This study found that 64% of the evaluated children and adolescents with asthma had already been hospitalized for the condition, 71% of whom had been rehospitalized, and 90% of whom had been treated in urgent or emergency units 1 to 2 times a month for symptom relief. The results indicated that treatment was limited to the pharmacological control of worsening symptoms, predominantly on an outpatient level, as in other places. The economic impact of care was high and increasing, especially considering that the purchased supplies were, for the most part, drugs for symptom relief (fast-acting bronchodilators and methylxanthines), which are ineffective for long-term treatment.¹⁹

The program was made possible through an agreement between the Federal University of Minas Gerais and the Belo Horizonte Municipal Health Department, pooling public health network resources. It was first implemented in 1996, offering training to health teams and asthma education to patients and their families. It reorganized care for asthmatic children at all levels of the public health system and provided medications to treat worsening symptoms and control the disease.

The in-service training of primary care unit staff was essential for changing the care paradigm from acute crisis treatment to long-term anti-inflammatory treatment.²⁰ The training involved pediatricians, general practitioners, nurses, and pharmacists, and was based on the 1995 Global Initiative for Asthma document. Two referral centers for specialized care in pediatric pulmonology were created. They initially treated children < 5 years of age, since the studies showed that they are at the greatest risk of hospitalization. Children ≥ 5 years and adolescents were referred to reference centers and were later

monitored by primary care units. Health education campaigns involved the health team, patients, and family members.²¹ Patient attachment to a primary care unit was considered essential for continuing education about important topics, such as treatment adherence, environmental control, exposure to allergens, exercise encouragement, recognizing when symptoms are worsening.

The results of the program included greater confidence in prescribing and using inhaled corticosteroids, greater sensitivity in patient care, and greater confidence to adequately diagnose and treat the disease. In subsequent years, prescriptions for inhaled corticosteroids and the use of aerosol bronchodilator devices with spacers both increased, while hospitalizations decreased by a 79%.²²

In an article published 10 years later, the authors reported the program's positive impact on local epidemiological indicators, quality of life, care quality, and the production of unprecedented scientific knowledge.²³ They described the following challenges: low adherence to the program (50 to 60% of children), which may have affected the asthma control results (a problem reported in other places); the fact that the municipal-university partnership depends on the will and interest of management, which could at some point make it difficult for the program to continue; increased Family Health Strategy coverage, which represents the PHC strategy in a country that, while favoring access to health care, has few professionals qualified to diagnose and treat asthma; and lack of access to more potent corticosteroids in PHC for more complex cases.²³

Another successful example is the Bahia Asthma Control Program, which improved the lives of patients with severe asthma and related epidemiological indicators in the cities of Salvador and Feira de Santana. This multi-institutional teaching, research, and specialized assistance program, which is based on the National Asthma Control Plan, is coordinated by the Federal University of Bahia and financed by the Bahia Research Support Foundation (FAPESB) and operated with the support and collaboration of the municipal (Salvador) and state (Bahia) governments.²⁴ It was implemented in 2003 as a severe asthma referral center for PHC patients in the cities of Salvador and Feira de Santana and the surrounding metropolitan regions. The initiative arose from the need for an adequate treatment approach and specialized follow-up for patients with the most severe forms of asthma, most of whom do not have access to long-

Table 2
Successful asthma programs in Brazil

Asthma programs in Brazil				
Program	Year	Locale	Objectives	Financing
<i>Programa Criança que Chia*</i> (Wheezing Child Program)	1996	Belo Horizonte (MG)	Team training. Asthma education. Systematization of care. Free access to medication.	Federal University of Minas Gerais Public funding: municipal and state public health network. National Medication Plan (UHS).
<i>Programa de Atenção Integral à Criança Asmática</i> (Comprehensive Care Program for Asthmatic Children)	1996	Fortaleza (CE)	Training in care provision. Health education. Research.	Public funding: municipal and state public health networks. National Medication Plan (UHS).
<i>Programa de Assistência ao Paciente com Asma</i> (Asthma Patient Assistance Program)	1996	São Luís (MA)	Creating an asthma reference center. Health education. Professional training.	Federal University of Maranhão University Hospital.
<i>Programa Crescendo com Saúde – Infecções e Alergias Respiratórias</i> (Growing Up Healthy Program – Respiratory Infections and Allergies)	2000	Curitiba (PR)	Organize care flow. Free access to medication. Professional training. Reducing morbidity and mortality.	Municipal health network. Federal University of Paraná Clinical Hospital and the Pequeno Príncipe Children's Hospital.
<i>De volta para Casa & Asma</i> (Back Home & Asthma)	2001	Porto Alegre (RS)	Training and continuing education. Guidelines and flowcharts for diagnosis and treatment. Reducing hospitalizations for asthma.	Public funding: municipal and state public health networks. National Medication Plan (UHS).
<i>Programa de Atendimento ao Paciente Asmático do Distrito Federal</i> (Assistance Program for Asthmatic Patients in the Federal District)	2001	Brasília (DF)	Asthma education.	Public funding: municipal and state public health networks. National Medication Plan (UHS).

Table 2 (continuation)
Successful asthma programs in Brazil

Asthma programs in Brazil				
Program	Year	Locale	Objectives	Financing
<i>Programa Respira Londrina</i> (Breathe Londrina Program)	2002	Londrina (PR)	Continuing education. Active patient search. Timely diagnosis and treatment. Free access to medication and comprehensive care.	Public funding: municipal and state public health networks. National Medication Plan (UHS).
<i>Programa de Controle da Asma na Bahia* – ProAR*</i> (Bahia Asthma Control Program – ProAR)	2003	Salvador e Feira de Santana (BA)	Comprehensive care. Free access to medication. Creating a severe asthma reference center. Health education. Professional training.	Bahia State Research Support Foundation (FAPESB). Public funding: municipal and state public health networks. National Medication Plan (UHS).
<i>Programa de Controle da Asma – CATAVENTO</i> (CATAVENTO Asthma Control Program)	2003	Goiânia (GO)	Continuing education. Active patient search. Free access to medication. Care training. Awareness and improvement of local epidemiological indicators.	Public funding: municipal and state public health networks. National Medication Plan (UHS).
<i>Programa de controle de Asma – Respira Niterói</i> (Asthma Control Program – Breathe Niterói)	2003	Niterói (RJ)	Diagnosis and treatment. Comprehensive care. Public management awareness. Improving local epidemiological indicators.	Public funding: municipal and state public health networks. National Medication Plan (UHS).
<i>Plano de Atenção ao paciente com asma e rinite do Município do Rio de Janeiro – RespiraRio</i> (Care Plan for patients with asthma and rhinitis in the city of Rio de Janeiro – RespiraRio)	2004	Rio de Janeiro (RJ)	Reducing morbidity and mortality. Professional training. Continuing education. Creating asthma reference centers. Ensuring access to medication and diagnostic tests. Improving the information system.	Public funding: municipal and state public health networks. National Medication Plan (UHS).

Table 2 (continuation)
Successful asthma programs in Brazil

Asthma programs in Brazil				
Program	Year	Locale	Objectives	Financing
<i>Programa CreAs – Controle de Rinite e Asma da Santa Casa de Misericórdia</i> (Rhinitis and Asthma Control Program of Santa Casa de Misericórdia)	2006	Vitória (ES)	Establish a reference center. Health education. Continuing education. Searching for and controlling comorbidities.	Municipal funding, Santa Casa de Misericórdia School of Medicine Teaching Hospital (EMESCAM).
<i>Programa Infantil de Prevenção de Asma (PIPA)</i> (Children's Asthma Prevention Program)	2012	Uruguaiana (RS)	Reducing morbidity and mortality from asthma in children.	Public funding: Municipal Secretary of Health, municipal government.

Adapted from Cerci et al.²³.
UHS: Unified Health System.

term anti-inflammatory treatment.^{24,25} The program's main goals were to provide comprehensive care for patients with asthma in the public health system, to provide free asthma medications, to construct reference outpatient clinics for severe cases, and to train primary care teams to treat mild and moderate forms of the disease.

In the first years of the program, 4 reference centers were established in Salvador and 1 in Feira de Santana, expanding access to specialized asthma care. After initiating the program, there was an 85% reduction in emergency room visits, a 90% reduction in hospitalizations in the public health system, an 86% reduction in school and work absenteeism, and a 67% decrease in oral corticosteroid use in the target population.²⁶

Regarding the disease's direct and indirect costs to families, there was a 50% reduction in commuting time, a 59% reduction in time spent in waiting rooms due to asthma crises, and an 80% reduction in school absenteeism. Although pharmaceuticals weighed heavily on family budgets, after the program began,

asthma-related expenses reduced from 37.5% to 4.5% of the family income. As a result, the mean family income increased 10% and treatment costs reduced 86.3%, resulting in a 50% mean increase in annual family income.²⁷ The cost of hospitalizations and emergency/intensive care was significantly reduced, even considering the increased public sector spending on inhaled medications, complementary tests, and consultations.²⁸

Since the program's implementation, a number of studies based on its data have produced highly relevant results. One of these studies compared demographic, clinical, and pulmonary function profiles between 2 cohorts of adults with severe asthma: a Brazilian cohort from the Bahia Asthma Control Program, a European cohort from a consortium of academic institutions, the pharmaceutical industry, and patient organizations (U-BIOPRED), and controls with mild/moderate asthma from Brazil and 11 European countries. Despite some differences, the phenotypic similarities confirmed asthma as a nosological entity, which allows cooperative studies between groups from

different regions of the world on important issues, such as the phenotypic variability of the disease and treatment response.²⁹

Another study conducted with the Bahia Asthma Control Program cohort found that patients with severe asthma are 53% more likely to be depressed, possibly due to poor quality of life from frequent crises and disabling symptoms. The study considered asthma an adverse life event, inducing suffering and stress (both physical and mental). Psychological stress can lead to an increase in pro-inflammatory markers, which may underlie the relationship between asthma and depression.³⁰

The Children's Asthma Prevention Program, created in 2012 in Uruguaiana, RS, is another successful example that began as an individual initiative and was later incorporated as a municipal program, ensuring that its actions reached the entire municipality on a continuing basis. Aiming to reduce morbidity and mortality, it decisively improved care quality, epidemiological indicators, and the quality of life of children and adolescents with asthma in the region.³¹

Where are we right now?

According to the World Health Organization, 400 million people worldwide are without access to essential health care. Although significant advances have been made in health conditions and quality of life, they are unevenly distributed, both among and within countries. In some places, health systems are weak and poorly integrated, staff and resources are lacking, and the provided care is fragmented and of low quality.³² It is believed that integrated health services focused on continuous care in a user-centered approach will lead to better care quality, increased resolution of health conditions, and greater user satisfaction while optimizing resources.^{32,33}

Aligning specialized care at secondary and tertiary levels with PHC is foundational to comprehensive health care (aka “shared” or “collaborative” care), which is centered on staff routines and greater involvement of care teams and health services at different levels of care.³⁴ Similar efforts have shown positive results in asthma treatment,³⁵ as well as in other areas, such as mental health³⁶ and ophthalmology.³⁷

Specialized care, an important component of the Brazilian health system, is the most precarious level due to a lack of coordination and overload, making

it difficult to organize health care according to HCN parameters.⁵ Certain aspects of HCN organization, especially PHC and specialized care, have been the subject of frequent discussion. The following have been identified as critical points for restructuring efforts:

1. the lack of understanding about how HCNs work and the role of each component in their organization;
2. the lack of coordination within the HCN, which, by definition, should control PHC;
3. the lack of a referral system based on risk classification, guaranteeing equitable care;
4. the lack of qualified multidisciplinary teams for comprehensive and integrated specialized care;
5. non-cost-effective diagnostic services recommended apart from scientific evidence that are not prioritized according to risk.

Underdiagnosis and suboptimal care for asthma also occur in other countries, especially those with limited health resources. A Vietnamese study proposed an algorithm based on syndromic diagnosis to address respiratory complaints in health units, finding greater diagnostic standardization and more appropriate therapeutic regimens started in a timely manner.³⁸

Perhaps an international effort to promote greater awareness and prioritization of asthma and other allergic diseases in public health systems could change the current treatment situation and improve patient quality of life.

Final considerations

Brazil still has no national policy for people with allergic diseases and asthma. The advances and benefits obtained so far result from localized efforts that have improved the lives of thousands of patients with asthma and local epidemiological indicators. These pioneer programs serve as models to be reproduced and adapted in order to reach more people and yield greater results. While acknowledging the invaluable role of these initiatives for quality asthma care, their heterogeneous distribution is contrary to the Unified Health System's principles of equity and comprehensiveness.

Understanding the Brazilian health system's functioning, organization, and the role of each service point in the HCN are fundamental for identifying

weaknesses and finding solutions. Closer alignment between care levels is foundational for diagnosis, evidence-based treatment, risk stratification, and regulating patient flow within the HCN, including necessary adaptations to improve care quality, health conditions, and the population's quality of life. Better training for agents at each care level (not just PHC) can be the starting point for this change. Each level of health care should be aware of the skills and scope of the others, so that health system users receive care in a climate of solidary cooperation.

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