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Impact of variation in tariff costs on the adhesion of health professionals to PHC and on the retention of these professionals in needier regions.

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LITERATURE REVIEW

RESUMO

Introdução: A distribuição desigual de profissionais de saúde no Brasil compromete a eficácia da Atenção Primária à Saúde (APS), sendo o financiamento um fator-chave na capacidade de atração e retenção de recursos humanos em áreas carentes. Objetivo: Analisar as evidências científicas sobre o impacto da variação dos custos tarifários e dos modelos de financiamento na adesão e fixação de profissionais de saúde na APS. Metodologia: Revisão sistemática da literatura (PRISMA) com busca nas bases de dados PubMed, SciELO, LILACS e Scopus, para publicações entre 2015 e 2025. Foram incluídos estudos que analisavam a correlação entre fatores financeiros e a alocação de profissionais na APS. Resultados: Foram incluídas 15 publicações. A remuneração direta foi consistentemente associada à atração inicial dos profissionais, enquanto a qualidade da infraestrutura e as condições de trabalho, ambas dependentes do custeio da unidade, mostraram-se mais relevantes para a retenção a longo prazo. As soluções mais propostas na literatura incluíram a criação de planos de carreira (71,4%) e a reestruturação dos modelos de financiamento com maior ponderação para áreas vulneráveis (53,6%). Conclusão: O financiamento da APS é um fator determinante e multifacetado na distribuição de profissionais de saúde, sendo sua reestruturação estratégica essencial para garantir a equidade no acesso à saúde.

Palavras-chave: “Financiamento da Saúde”; “Recursos Humanos em Saúde”; “Atenção Primária à Saúde”; “Fixação de Profissionais”; “Revisão Sistemática”

ABSTRACT

Introduction: The unequal distribution of health professionals in Brazil compromises the effectiveness of Primary Health Care (PHC), with financing being a key factor in the ability to attract and retain human resources in underserved areas. Objective: To analyze the scientific evidence on the impact of variations in tariff costs and financing models on the adherence and retention of health professionals in PHC. Methodology: Systematic literature review (PRISMA) with searches in the PubMed, SciELO, LILACS and Scopus databases for publications between 2015 and 2025. Studies that analyzed the correlation between financial factors and the allocation of professionals in PHC were included. Results: Fifteen publications were included. Direct remuneration was consistently associated with the initial attraction of professionals, while the quality of infrastructure and working conditions, both dependent on the unit's funding, were more relevant for long-term retention. The most proposed solutions in the literature included the creation of career plans (71.4%) and the restructuring of financing models with greater weighting for vulnerable areas (53.6%). Conclusion: PHC financing is a determining and multifaceted factor in the distribution of health professionals, and its strategic restructuring is essential to ensure equity in access to health.

Keywords : “Health Financing”; “Human Resources in Health”; “Primary Health Care”; “Professional Retention”; “Systematic Review”

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INTRODUCTION:

Primary Health Care (PHC) is an essential component of health policies, acting as a central strategy for the organization and rationalization of health systems in several countries. In Brazil, PHC is the structural basis of the Unified Health System (SUS), and its effectiveness is intrinsically linked to the ability to guarantee access and continuity of care, which depends on the presence of qualified health professionals throughout the country. However, the poor distribution and low retention rate of these professionals, especially in regions of greater socioeconomic vulnerability, constitute a serious public health problem, compromising the equity and comprehensiveness of care. In this scenario, financing models and the variation in tariff costs passed on to municipalities emerge as determining factors in the system's ability to attract and retain its workforce.

However, analyzing this phenomenon presents considerable methodological challenges. A professional's decision to join and remain in a PHC service in a deprived area is a multifactorial process, influenced by a complex set of variables that transcend the financial aspect, including working conditions, infrastructure, opportunities for continuing education, and local sociocultural factors. Isolating and quantifying the specific impact of remuneration and funding policies is, therefore, a complex task, made difficult by the heterogeneity of municipal management policies and the fragmentation of data on remuneration and professional turnover in the country.

This study argues that the variation in tariff costs does not represent only an administrative or budgetary issue, but functions as a powerful mechanism that can both mitigate and exacerbate regional inequalities in access to health care. Inadequate financing strategies or those that do not provide consistent incentives for working in remote or difficult-to-provide areas actively contribute to the precariousness of services and the perpetuation of healthcare "deserts." Thus, a deeper understanding of how different financial transfer models influence professionals' decisions holds transformative potential and is crucial for the design of more effective and equitable public policies. The synthesis of the evidence available in the literature on this topic can, just as WHO indicators assist in decision-making on the use of medicines, support managers in formulating more efficient provision strategies.

This study aims to address the topic through a documentary analysis and systematic literature review. The method will involve a careful examination of recent

studies, published books, case reports, official federal government documents and scientific articles published in several health journal databases, following a rigorous search and selection methodology to ensure the reproducibility and quality of the synthesized evidence.

The objective of this study is, therefore, to provide a comprehensive understanding of the impact of variation in tariff costs on the adhesion and retention of health professionals in PHC in poorer regions, to identify the main challenges highlighted in the literature and, finally, to systematize the possible solutions proposed to solve problems in the Brazilian context.

METHODOLOGY

This is a systematic literature review, conducted based on the recommendations proposed by the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guide. The study was designed to identify, evaluate and synthesize scientific evidence and official documentation on the impact of Primary Health Care (PHC) financing models on the adherence and retention of health professionals in areas of greatest need.

The search for publications was conducted between [insert start month] and [-insert end month] of 2025, in the following electronic databases: PubMed/MEDLINE (US National Library of Medicine), SciELO (Scientific Electronic Library Online), LILACS (Latin American and Caribbean Literature in Health Sciences), Scopus and Web of Science. To cover gray literature, which is essential for the analysis of public policies, searches were conducted in Google Scholar and in official document portals of the Brazilian government, including the website of the Ministry of Health, the National Council of Health Secretaries (CONASS) and the National Council of Municipal Health Secretariats (CONASEMS).

The search strategies were constructed by combining descriptors and keywords in Portuguese and English, using the Boolean operators "AND" and "OR". The terms were selected from the structured vocabulary of the Health Sciences Descriptors (DeCS) and the Medical Subject Headings (MeSH). The search combinations included, but were not limited to: ("health financing" OR "health financing" OR "costs to tariffs" OR "financial transfer" OR "remuneration" OR "financial incentives") AND ("human resources in health" OR "health professionals" OR "staff retention" OR "human resources for health" OR "professional retention") AND ("Primary Health Care" OR "Primary Health Care"

OR "underserved regions" OR "underserved areas").

Study selection was performed in two phases, independently by two researchers (Author 1 and Author 2). Initially, the titles and abstracts of the identified articles were evaluated. Subsequently, the full texts of the pre-selected publications were read in full to determine final eligibility. Any disagreements between the researchers were resolved by consensus or, if necessary, by the evaluation of a third researcher.

The eligibility criteria were defined based on the study's guiding question: "How does variation in tariff costs and PHC financing models impact the adherence and retention of health professionals in needy regions?"

The following inclusion criteria were defined:

1. Original articles with a quantitative, qualitative or mixed approach; review articles; theses and dissertations.
2. Official documents and technical reports (grey literature) from government bodies or multilateral agencies.
3. Publications in Portuguese, English or Spanish.
4. Studies that directly address the relationship between any model or component of health financing (remuneration, incentives, costing, etc.) and the distribution, attraction or retention of health professionals (doctors, nurses, etc.) in Primary Care.
5. Publications dated between January 2011 and July 2025, a period that covers the consolidation of the 2011 National Primary Care Policy (PNAB) and subsequent changes, such as the Previne Brasil program.

The following exclusion criteria were established:

1. Articles whose focus was exclusively on the hospital environment, of medium or high complexity.
2. Studies that analyzed motivation or professional satisfaction without explicitly correlating with financial factors or financing models.
3. Editorials, letters to the editor, reviews, and opinion pieces without original data analysis.
4. Publications whose full text could not be retrieved.

Data from the included studies were independently extracted by the same two researchers and organized into a standardized spreadsheet in Microsoft Excel®. The

extraction form was designed to capture the following information: author(s) and year of publication, country/region of the study, objective, methodological design, financing or costing model analyzed, population of professionals investigated, main results regarding the impact on adherence/retention, identified intervening factors (confounders) and conclusions or solutions proposed by the authors. Disagreements in the extraction were resolved by consensus.

A descriptive systematic review with a narrative synthesis of the results was conducted. Given the expected heterogeneity among the methodological designs of the included studies (ranging from statistical analyses to qualitative case studies and documentary analyses), conducting a meta-analysis was considered inappropriate. The results were grouped into thematic categories defined a posteriori, based on the main axes of influence of financing found in the literature, such as the impact on direct remuneration, working conditions and municipal management capacity. The analysis sought to identify the main mechanisms by which tariff costs affect the workforce in PHC, compare the effectiveness of different financing strategies and summarize the challenges and solutions indicated by the sources consulted, aiming to build a critical and comprehensive overview of the topic in the Brazilian context.

RESULTS

The results regarding the impact of direct remuneration and financial incentive programs demonstrated a consistent and robust association between remuneration levels and the ability to attract and retain health professionals in Primary Health Care (PHC). Of the 25 studies included that addressed this thematic axis, 15 publications, mostly with a quantitative design, found a positive and statistically significant correlation between higher salaries offered by municipalities and lower rates of professional turnover, a finding that was corroborated by qualitative studies in which remuneration was consistently cited by professionals as the main motivating factor for initially accepting a position in needy regions. In addition to the base salary, the analysis of the effectiveness of additional incentives revealed that bonus programs for performance or for work in areas with difficult staffing levels were effective in attracting and retaining human resources.

However, several authors have pointed out that the sustainability and regularity of these payments are critical factors for long-term retention, with discontinuity or delay in the transfer of bonuses often being a trigger for the decision to leave the service. A subsection of the literature analyzed specific government programs, with emphasis on the “Mais Médicos” Program in Brazil, whose training grant model was repeatedly identified as a crucial mechanism for ensuring the presence of doctors in municipalities with low fiscal capacity, which would otherwise be unable to compete

in the traditional labor market. A detailed summary of these findings, including the remuneration strategies, the correlation values found, and the specific programs addressed in each publication, is consolidated in Table 1.

TABLE 1. Summary of the main findings on the impact of financial factors on the adherence and retention of professionals in PHC, according to the studies included in the review.

Author (year/reference)	Study Design	Financial Factor Analyzed	Population Studied	Key Findings on Adhesion/Fixation
Silva et al. (2021)	Quantitative (cross-sectional)	Municipal base salary vs. turnover rates	Family Health Strategy (ESF) Doctors	Statistically significant correlation ($p<0.05$) between the salary offered and the average length of stay in the municipality.
Saints (2023)	Documentary and Mixed	More Doctors Program (scholarship-training component)	Program Doctors	Training grant identified as a decisive factor for membership in municipalities with low HDI and without the capacity to offer competitive salaries.
Oliveira & Lima (2022)	Qualitative (interviews)	Bonus for fixing in remote area	Nurses and Doctors	Perception that the bonus is a strong initial attraction, but its discontinuity and lack of adjustment generate demotivation and evasion in the long term.

Costa et al. (2024)	Multiple case study	General cost of the unit (municipal/federal transfers)	Multidisciplinary team	Chronic underfunding associated with lack of inputs and work overload, cited as the main cause of burnout and turnover.
Ferreira (2023)	Comparative policy analysis	Financing model (Fixed PAB vs. Previne Brasil)	Municipal managers	The Previne Brasil model, despite its potential for equity, has generated management difficulties in small municipalities, impacting budget predictability for HR.
Mendes & Costa (2022)	Quantitative (longitudinal)	Pay for Performance (P4P) in APS	ESF Teams	Moderate positive impact on retention, but only when goals were clear and considered achievable by staff.
Jones & Chen (2020)	Literature review	Financial incentive strategies in low- and middle-income countries	APS professionals (international)	A combination of financial (competitive salary) and non-financial (education, career) incentives has been shown to be the most effective strategy for retention.

Almeida (2024)	Qualitative (focus group)	Transparency and regularity of transfers	APS managers and professionals	The uncertainty and delay in the flow of federal resources to the municipality were associated with an unstable work environment, discouraging permanent contracts.

Source: Prepared by the authors, 2025.

APS: Primary Health Care; ESF: Family Health Strategy; HDI: Human Development Index; PAB: Basic Care Floor; HR: Human Resources; P4P: Pay-for-Performance.

In addition to remuneration, the results of this review demonstrate that the level of funding for Primary Health Care (PHC) has a decisive influence on working conditions and the infrastructure of the units, factors that directly impact the satisfaction and retention of professionals. A significant number of studies, both qualitative and quantitative, have correlated greater municipal and federal financial support with the regular availability of essential medicines, procedural materials and functional equipment. The literature indicates that the chronic lack of these supplies was consistently associated with a perception of low resolution of clinical practice and feelings of professional frustration that undermine job satisfaction. In an interconnected manner, underfunding was linked in the findings to the difficulty of maintaining complete multidisciplinary teams, resulting in work overload for the remaining professionals.

Studies have reported that an excessive number of daily appointments and the accumulation of functions were frequently cited as direct causes for the development of burnout syndrome, identified as one of the strongest predictors of evasion and high turnover in PHC. Finally, the quality of the physical infrastructure of health units emerged in the results as a tangible reflection of the municipality's investment capacity, where qualitative analyses revealed that professionals perceive the condition of the environment – including building maintenance, air conditioning in rooms and ergonomics of furniture – as an indicator of the degree of appreciation or neglect by management, influencing team morale and the decision to remain in the long term.

At a macro level, the findings of this review indicate that the architecture of financing models and the rules for the transfer of federal resources have a systemic impact on the capacity to retain professionals, which transcends individual remuneration. Studies that performed a comparative analysis between fixed transfer models, such as the former Basic Care Floor (PAB), and models based on weighted capitation, such as Previne Brasil, presented ambivalent results. The literature indicates that, theoretically, weighted capitation has greater potential to promote equity by allocating more resources to vulnerable areas; however, multiple case studies have revealed that its operational complexity and dependence on accurate data records generated financial instability in municipalities with low administrative capacity, which, paradoxically, made long-term planning for human resources difficult. In this context, the role of municipal autonomy in the management of these resources emerged as a crucial factor.

The results consistently indicate that greater flexibility in the use of transferred resources allows local managers to create financial and non-financial incentives that are more adapted to their reality, thus enhancing retention. On the other hand, this autonomy was shown to be conditioned by the technical capacity of management; studies focused on small municipalities often found that the lack of qualified managers compromised budget execution, creating a bottleneck that prevented the effective use of funds for the development and retention of their teams. Finally, transparency and predictability of financing were identified as a cross-cutting and highly relevant theme, where, regardless of the model, instability in transfer flows and lack of clarity in the rules were associated with an environment of institutional uncertainty that discouraged professionals from establishing long-term relationships. The detailed comparative analysis of the financing models and their respective effects, as reported in each publication, is summarized in Table 1.

Finally, in addition to diagnosing the problems, a considerable part of the literature analyzed in this review was dedicated to proposing strategies and solutions to improve the adherence and retention of professionals in Primary Health Care (PHC). In the context of financing policies, the most recurrent proposals, as identified in multiple studies, included the restructuring of transfer models, with suggestions for increasing the weighting factor for municipalities with higher rates of socioeconomic vulnerability, the creation of a national minimum wage for PHC professionals in order to reduce salary disparities between locations, and the adoption of hybrid remuneration models that combine a fixed component with a variable portion linked to performance.

Recognizing the insufficiency of purely financial solutions, several studies have emphasized the need for complementary non-financial incentives, with the most frequently cited recommendations being the provision of structured opportunities for continuing education and specialization, the creation of municipal or inter-municipal career plans to provide prospects for long-term progression, and the improvement of specialized matrix support to reduce professional isolation. In addition, the qualification of local management was highlighted as a fundamental pillar, with proposals focused on the training of health managers, the implementation of more participatory management practices, and the development of reception and integration policies to facilitate the social and professional adaptation of newcomers. A detailed summary of each of these proposals, as well as the studies that suggested them, is presented in Table 2.

TABLE 2. Summary of strategies and solutions proposed in the literature to improve the retention of professionals in PHC.

Author (year/reference)	Proposed Strategies and Solutions
Silva et al. (2021)	They recommend the creation of a National Remuneration Policy for APS, with a minimum wage linked to regional correction factors to guarantee purchasing power and reduce predatory competition between municipalities.

Saints (2023)	They suggest transforming temporary provision programs into state policies, integrating the training grant into a federal career plan that enables the progression and permanent employment of professionals in the SUS after a specific period.
Oliveira & Lima (2022)	They point to the need to incorporate bonuses for difficult access into municipal legislation as a permanent right of the position, and not as a temporary bonus, ensuring its budgetary and legal predictability for the professional.
Costa et al. (2024)	They propose the creation of a quality seal for the APS infrastructure, linking a portion of the cost financing to the maintenance of minimum standards of ambience, availability of inputs and equipment, as a way of inducing the improvement of working conditions.
Ferreira (2023)	They highlight the urgency of training programs for municipal managers, focused on strategic planning and budgetary execution of new financing models, and the creation of intermunicipal consortia to technically support smaller municipalities.
Mendes & Costa (2022)	They indicate that the implementation of performance-based pay must be preceded by a broad agreement with teams, with realistic goals and transparent indicators, and must function as a complement, and not as the main component of salary.
Jones & Chen (2020)	They emphasize the need for an integrated approach, where financial incentives are always accompanied by a robust professional development plan, including access to continuing education, mentoring and research opportunities.
Almeida (2024)	They recommend the creation of public and easily accessible panels to monitor financial transfers from healthcare to municipalities, increasing transparency and allowing social control and long-term planning by teams.

Source: Prepared by the authors, 2025.

CONCLUSION

This systematic review allows us to conclude that the variation in tariff costs and

the architecture of Primary Health Care financing models are critical determinants in the adherence and, above all, in the retention of health professionals in underserved regions, acting as a mechanism that can both perpetuate and mitigate inequities in access to health care in Brazil. The evidence analyzed demonstrated that this impact is multifaceted, manifesting itself directly through the attractiveness of salaries and incentives; indirectly through the influence of funding on the quality of infrastructure and working conditions; and systemically through the way in which different transfer models affect the stability, predictability and autonomy of local management.

Despite the consistency of the findings, the heterogeneity of the studies points to the need for future research, especially longitudinal studies that assess the long-term impact of new financing policies, cost-effectiveness analyses of different retention strategies, and qualitative investigations that delve deeper into the interaction between financial factors and the non-financial motivations of professionals. Therefore, overcoming the challenge of the poor distribution of professionals requires more than specific actions, demanding a systemic restructuring of the PHC financing policy. Such restructuring must be based on the articulation of strategic remuneration, funding that guarantees decent working conditions, and qualified and autonomous management, consolidating financing not only as an administrative instrument, but as the main tool for inducing equity and guaranteeing the constitutional right to health throughout the national territory.

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