REVISTA BRASILEIRA DE MEDICINA DE FAMÍLIA E COMUNIDADE
RBMFC

www.rbmfc.org.br
ISSN 2179-7994

Quality Improvement

Active search for individuals with respiratory symptoms in the territory of a Family Health Strategy team in Rio de Janeiro: an experience report

Busca ativa de sintomáticos respiratórios no território de uma equipe de Estratégia de Saúde da Família na Zona Norte do município do Rio de Janeiro: um relato de experiência

Búsqueda activa de sintomáticos respiratorios en el territorio del equipo de Estrategia de Salud Familiar en la Zona Norte del municipio de Rio de Janeiro: un relato de experiencia

Rodrigo de Sousa Batista Vieira[1], André Luis Souza do Vale[1], Lia Prudente Guimarães Arantes[1], William Vergasta dos Santos[1]

[1]Secretaria Municipal de Saúde – Rio de Janeiro (RJ), Brazil.

Abstract

Problem: In January 2023, the Parmalat Team identified only four confirmed cases of tuberculosis despite serving a population of more than 4,000 registered residents. **Methods:** Report on an experience of an active search for individuals with respiratory symptoms in the territory, involving all team members, who were equipped with a questionnaire and sputum collection containers for use in the field. **Results:** During the initiative, a small number of sputum samples were collected. Nevertheless, the initiative helped raise collective awareness regarding the presence of the disease in the territory. As a result, there was a spontaneous increase in people seeking care in the following weeks and months. By the end of September 2023, there had been a 325% increase, with 13 confirmed cases and an additional 18 under investigation. **Conclusions:** The incidence of tuberculosis cases in the territory before the initiative was approximately one per thousand inhabitants; after seven months, it rose to approximately 3.9 per thousand inhabitants. Following the initiative, the territory's rate was four times higher than that of the municipality in which it is located and 12 times higher than the national average. This experience underscores the importance of involving the entire healthcare team in territory-based initiatives.

Keywords: Tuberculosis; Respiratory Symptoms; Primary Health Care; Active Case Finding; Rio de Janeiro.

Corresponding author:
Rodrigo Vieira
E-mail: rodrigosbvieira@outlook.com
Funding:
No external funding.
Ethical approval:
Not applicable
Informed consent form:
not applicable.
Provenance:
not commissioned.
Peer review:
external.
Received on: 02/15/2024
Approved on: 04/10/2026
Associate editor:
Francisco Eduardo da Fonseca Delgado

How to cite: Vieira RSB, Vale ALS, Arantes LPG, Santos WV. Active search for individuals with respiratory symptoms in the territory of a Family Health Strategy team in Rio de Janeiro: an experience report. Rev Bras Med Fam Comunidade. 2026;21(48):4096. https://doi.org/10.5712/rbmfc21(48)4096

Resumo

Problema: Em janeiro de 2023, a Equipe Parmalat, apesar de atender a uma população superior a 4.000 residentes cadastrados, acompanhava somente quatro casos confirmados de tuberculose. **Método:** Relato de experiência de uma ação de busca ativa de sintomáticos respiratórios no território, com a participação de todos os membros da equipe, munidos de questionário e de frascos para coleta de escarro em campo. **Resultados:** Durante a ação, uma pequena quantidade de amostras de escarro foi colhida. Ainda assim, a experiência gerou maior consciência coletiva quanto à presença da doença no território. Com isso, houve aumento espontâneo na procura por atendimento para investigação nas semanas e meses seguintes. Ao final de setembro de 2023, havia ocorrido um aumento de 325%, com 13 casos confirmados e 18 adicionais em investigação. **Conclusão:** A incidência de casos de tuberculose no território, antes da ação, era de aproximadamente, um para cada mil habitantes, e, sete meses depois, aumentou para aproximadamente 3,9 para cada mil habitantes. Após a ação, o território apresentou uma taxa quatro vezes maior do que a do município em que está inserido e 12 vezes maior do que a média nacional. Esta experiência ressalta a importância do envolvimento de toda a equipe de saúde nas iniciativas territoriais.

Palavras-chave: Tuberculose; Sintomático respiratório; Atenção primária à saúde; Busca ativa; Rio de Janeiro.

Resumen

Problema: En enero de 2023, el Equipo Parmalat, a pesar de atender a una población superior a 4 mil inscritos, seguía solo cuatro casos confirmados de tuberculosis (TB). **Método:** Relato de la experiencia de acción de búsqueda activa de sintomáticos respiratorios en el territorio, con la participación de todos los miembros del equipo, provistos de cuestionario y frascos para la recolección de esputo en el campo. **Resultados:** Durante la acción, se recolectó una cantidad limitada de muestras de esputo. Sin embargo, la experiencia generó una mayor conciencia colectiva sobre la presencia de la enfermedad en el territorio. Como resultado, hubo un aumento espontáneo en las búsquedas de atención para la investigación en las semanas y meses siguientes. A finales de septiembre de 2023, se había producido un aumento del 325%, con 13 casos confirmados y otros 18 en investigación. **Conclusión:** La incidencia de casos de TB en el territorio antes de la acción era de aproximadamente uno por cada mil habitantes, y siete meses después, aumentó a aproximadamente 3.9 por cada mil habitantes. Después de la acción, el territorio presentó una tasa cuatro veces mayor que el municipio en el que está ubicado y 12 veces mayor que la media nacional. Esta experiencia destaca la importancia de la participación de todo el equipo de salud en las acciones territoriales.

Palabras clave: Tuberculosis; Sintomático respiratorio; Atención primaria de salud; Búsqueda activa; Rio de Janeiro.

INTRODUCTION

Tuberculosis (TB) is an infectious disease of global significance, ranking as the leading cause of death from infectious diseases among adults worldwide until the onset of the COVID-19 pandemic. Given its international significance and incidence, TB was declared a global public health emergency by the World Health Organization (WHO) in 1993. On the international stage, Brazil ranks among the 30 countries with the highest incidence rates, according to the WHO's latest global tuberculosis report[1].

In 2022, the prevalence of TB in the country was 36.3 cases per 100,000 inhabitants, with a mortality rate of 2.38 deaths per 100,000 inhabitants in 2021, lower than the level observed in 2019, which can be attributed to the reduction in the number of diagnoses made during the most severe phases of the COVID-19 pandemic[2]. Given the significance of the disease, Brazil, through the Ministry of Health, launched the National Plan to End Tuberculosis as a Public Health Problem, with a focus on policies to control the infection in the country by 2025, thereby highlighting the need for and importance of national and local actions to monitor and combat TB[2].

In this context, Rio de Janeiro ranks among the three Brazilian states with the highest risk of TB, with 68.6 cases per 100,000 inhabitants, higher than the national rate[2]. Furthermore, the state is the Federal Unit with the highest risk of death from TB, with five deaths per 100,000 inhabitants. The cure rate observed in Rio de Janeiro for laboratory-confirmed TB cases is 66%[2].

Although it has an extensive public health care network, the high incidence and mortality rates in Rio de Janeiro may reflect the complex socioeconomic reality of the state's population. The risk of developing the disease is strongly associated with high spatial population concentration, low educational attainment, low economic income, human immunodeficiency virus (HIV) coinfection, and alcoholism — factors that impact access to health services, consumer goods, and information, thereby increasing social vulnerability to TB[3]. From 2017 to 2021, the Brazilian Ministry of Health's Epidemiological Bulletin on Tuberculosis showed the highest number of cases among individuals with the lowest levels of education and a threefold higher number among black and mixed-race individuals, despite the poor quality of case registration[2].

Furthermore, since TB is a disease whose transmission depends on the degree of contact between the source individual and susceptible individuals, it is essential to understand the collective process of TB within a social context, highlighting the characteristics and location of these vulnerable groups, particularly those living in areas with high population density[4].

Given the importance of TB control, all health services bear the responsibility of conducting active case finding among individuals with respiratory symptoms (SR)[5] —that is, those who have had a cough for three weeks or more, a threshold that may be reduced to two weeks, increasing case detection with minimal impact on workload[6] — with the aim of early detection and appropriate treatment[5]. Furthermore, given the inseparable social nature of TB, as discussed earlier, it is clear that its control requires an understanding of the local context and the social determinants of health. In this regard, it is strategic to strengthen TB control measures within Primary Health Care, which serves as the ideal entry point for identifying new cases[7,8].

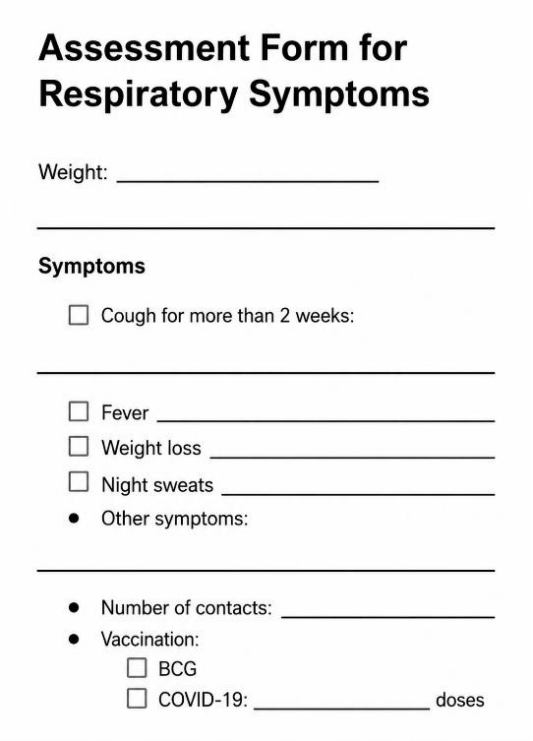
One of the seven Family Health Teams (eSF) in Marcos Valadão Family Clinic (CFMV), located in the Acari neighborhood, in the North Zone of the city of Rio de Janeiro, is called "Parmalat" because most of the population it serves lives in the three blocks and adjacent streets surrounding a former factory owned by the Italian company of the same name, which was squatted in after the company went bankrupt and subsequently abandoned the site[9]. Hundreds of families live there in makeshift apartments under precarious conditions, lacking basic sanitation, with high population density, high humidity, and poor air circulation.

In January 2023, the Parmalat Team, despite serving a population of over 4,000 registered individuals, was monitoring only four confirmed cases of active pulmonary TB. Considering that this number likely did not reflect the actual incidence of cases in the area, the team's physicians and nurse developed the initiative described in this study, with the goal of identifying and treating previously unreachable cases, raising public awareness about the signs and symptoms of TB and the importance of early diagnosis and treatment, and demonstrating their presence in the area, thereby strengthening the health team's bond with the community.

METHODS

This is an experience report describing an active case-finding initiative for SR in the territory of the Parmalat Team conducted in January and February 2023, planned by technical staff and carried out by all members of the eSF, who were present in the territory, in direct contact with the population, while identifying individuals for investigation as suspected cases.

An easy-to-complete questionnaire was developed, shown in Figure 1, with questions regarding the presence of the main signs and symptoms indicating the need for TB investigation, to equip the professionals involved in the initiative, including Community Health Workers, to identify SR and subsequently collect sputum samples for acid-fast bacilli testing in suspected cases.



Source: Developed by the authors; English translation provided for this article.
Figure 1. Instrument for the health team to assess signs and symptoms of tuberculosis.

Equipped with the questionnaire, vials, and specific forms from the local health system to facilitate sputum collection in the field, the team members divided into three groups, each led by a physician or a nurse, who took turns conducting active case finding for SRs in each of the three blocks of the former factory and the adjacent streets over the course of three days in January and February 2023.

Outcomes were continuously analyzed during weekly team meetings and through surveillance and list management activities carried out by team members over the following months. The number of confirmed TB cases following the intervention was compared to the total number of individuals registered with the team, in order to compare the incidence of the disease in the territory with local and national epidemiological indicators.

The need to draw inferences about the cause of the increase in cases monitored by the eSF, as will be discussed below, can be considered a limitation of this study, since it is based on the authors' subjective interpretation of the behavior of the community served in the months following the intervention. Thus, it is not possible to rule out the potential for overestimating or even underestimating the impact of the team's presence in the territory. Nevertheless, the analysis of the time series of patients with confirmed or suspected diagnoses before and after the intervention seeks to mitigate this subjectivity and support the establishment of a causal relationship.

Despite its practicality and reliance primarily on low-complexity technologies, the reproducibility of this report may also have limitations, as it was developed and carried out in an eSF with an internship and residency program in Family and Community Medicine, which, at the time, had three physicians, one medical student, one nurse, and six Community Health Workers. This greater availability of human resources facilitated active case finding throughout a large portion of the assigned area. Furthermore, the territory itself, being vertically developed, is compact and located near the Family Health Unit, which facilitated access and the movement of professionals carrying the materials, a situation that may be more difficult in other settings.

Anonymized individual participant data were not shared at any point during the preparation of this study, nor will they be shared at any point during its publication and dissemination. Furthermore, no additional documents related to this study are available.

This study was conducted in accordance with Resolution 466/2012 of the National Health Council, which sets forth the Guidelines and Regulatory Standards for Research Involving Human Subjects. It was approved by the Human Research Ethics Committee of Rio de Janeiro (CEP/SMS-RJ) on November 17, 2023, under CAAE 74996823.9.0000.5279.

RESULTS AND DISCUSSION

During the initiative, few patients with signs or symptoms suggestive of TB were identified, resulting in a small number of sputum samples being collected. Nevertheless, while going door-to-door to investigate the presence of suspected TB cases, the doctors, the nurse, the Community Health Workers, and the medical student spoke with most of the residents in the targeted micro-areas, also aiming to raise collective awareness regarding the presence of the disease in the territory and the importance of identifying and treating it early.

As they became more vigilant about the signs and symptoms of TB, patients with respiratory symptoms and their families began to seek out the team spontaneously for investigation more frequently in the weeks and months that followed. By the end of September 2023, about eight months after the initiative began, the number of TB patients being monitored by the team had increased by 325%, with 13 confirmed cases and another 18 under investigation, in addition to the contacts of those patients, who are under close surveillance. As a result, Parmalat Team is now responsible for more than one-third of the confirmed cases in the CFMV, which has six other teams.

The presence of technical staff from Parmalat Team in the community-based initiative resulted from a combined effort that continues to generate positive impacts on the health of the registered population with regard to TB. The incidence of TB in that territory prior to the initiative was approximately one case per thousand inhabitants, and seven months later, it increased to approximately 3.9 cases per thousand inhabitants.

It is important to note that in February 2023, following the territorial assessment and the initiative described here, the territory covered by CFMV was redistributed among the health teams in order to balance demand and workload among professionals, taking into account factors such as the territory's vulnerability, distance from the clinic, and the population's access profile in each area. Following the redistribution, the population served by the Parmalat Team fell from 4,086 to 3,310 people, according to data from the Electronic Medical Record. The dramatic increase in diagnosed TB cases, despite the reduction in the population served by the team, makes the disparity even more evident in relation to the epidemiological indicators of the disease in the municipality of Rio de Janeiro and also in Brazil.

The Tuberculosis Epidemiological Bulletin of Rio de Janeiro[10] indicates that, in 2021, the incidence of the disease in the municipality was 104.1 cases per 100,000 inhabitants. By comparison, following the intervention, the service area of the Rio de Janeiro Team had a rate four times higher than that of the municipality in which it is located. In the national level, the Ministry of Health's epidemiological bulletin[2] reports that, in 2021, the incidence of the disease in Brazil was 32 cases per 100,000 inhabitants, revealing that the study site currently has 12 times the national TB average.

The significant increase in TB cases identified by Parmalat Team is consistent with findings from similar experiences in other Brazilian municipalities, such as Marataízes, in Espírito Santo[11]. A study conducted in Fortaleza, Ceará, observed an increase in the number of TB cases from one to 22 in the same area of high social vulnerability over a two-year period following training for the service's eSFs. This increase in detected cases was also significant compared to the municipality's figures for the same period[12].

A lack of interest in TB among healthcare professionals, especially physicians, is cited in some studies as a limiting factor in combating the disease in PHC[13]. Deliberately, the initiative reported here was designed to allow for the active participation of all professional categories, in order to increase its reach and effectiveness. Finally, Pelissari et al.[14] also showed that early identification of TB is related to contact tracing, active case finding of SR, and the provision of sputum collection.

This experience highlights the importance of involving the entire healthcare team in community-based interventions, encouraging each team member — not just Community Health Workers — to take responsibility for active case finding for SR in micro-areas.

Furthermore, studies highlight the importance of incorporating the attributes of Primary Health Care when developing strategies for TB control[15], with particular emphasis on family and community orientation, as well as implementing programmatic actions for this purpose, including professional training in active case finding[16]. Finally, it is also essential that teams continuously carry out popular health education initiatives, empowering the population to take care of their own health, that of their family members, and that of the community.

CONFLICT OF INTERESTS

Nothing to declare.

AUTHORS' CONTRIBUTIONS

RSBV: Conceptualization, Formal analysis, Investigation, Methodology, Project administration, Resources, Validation, Visualization, Writing – original draft, Writing – review & editing. ALSV: Conceptualization, Formal analysis, Investigation, Methodology, Project administration, Resources, Validation, Writing – original draft. LPGA: Conceptualization, Formal analysis, Investigation, Methodology, Project administration, Resources, Validation, Writing – original draft. WVS: Conceptualization, Formal analysis, Investigation, Methodology, Project administration, Resources, Supervision. Validation, Writing – original draft.

REFERENCES

1. World Health Organization. Global tuberculosis report 2022 [Internet]. Genebra: WHO; 2022 [cited on Oct 01, 2023]. Available at: https://www.who.int/teams/global-tuberculosis-programme/tb-reports/global-tuberculosis-report-2022

2. Brasil. Ministério da Saúde. Secretaria de Vigilância em Saúde. Boletim Epidemiológico: tuberculose [Internet]. Brasília: Ministério da Saúde; 2022 [cited on Sept 30, 2023]. Available at: https://www.gov.br/saude/pt-br/centrais-de-conteudo/publicacoes/boletins/epidemiologicos/especiais/2022/boletim-epidemiologico-de-tuberculose-numero-especial-marco-2022.pdf
3. San Pedro A, Oliveira RM. Tuberculose e indicadores socioeconômicos: revisão sistemática da literatura. Rev Panam Salud Publica. 2013;33(4):294-301.
4. Fasca SF. Tuberculose e condições de vida: uma análise do Estado do Rio de Janeiro, Brasil, 2000 a 2002 [dissertação de mestrado]. Rio de Janeiro: Fundação Oswaldo Cruz; Escola Nacional de Saúde Pública; 2008.
5. Bertolozzi MR, Takahashi RF, Hino P, Litvoc M, França FOS. O controle da tuberculose: um desafio para a saúde pública. Rev Med. 2014;93(2):83-9. https://doi.org/10.11606/issn.1679-9836.v93i2p83-89
6. Sociedade Brasileira de Pneumologia e Tisiologia. Comissão de Tuberculose/Grupo de Trabalho das Diretrizes para Tuberculose. III Diretrizes para tuberculose da Sociedade Brasileira de Pneumologia e Tisiologia. J Bras Pneumol. 2009;35(10):1018-48. http://dx.doi.org/10.1590/S1806-37132009001000011
7. Spagnolo LML, Tomberg JO, Vieira DA, Gonzales RIC. Detecção da tuberculose: fluxo dos sintomáticos respiratórios e resultados alcançados. Rev Bras Enferm. 2018;71(5):2543-51. https://doi.org/10.1590/0034-7167-2017-0457
8. Paiva RCG, Nogueira JA, Sá LD, Nóbrega RG, Trigueiro DRSG, Villa TCS. Acessibilidade ao diagnóstico de tuberculose em município do nordeste do Brasil: desafio da atenção básica. Rev Eletr Enferm. 2014;16(3):520-6. https://doi.org/10.5216/ree.v16i3.23491
9. Silva TL. Do invadir ao permanecer: experiências do habitar e precariedade numa invasão fabril no Complexo de Acari [master's thesis]. Rio de Janeiro: Universidade do Estado do Rio de Janeiro; 2017.
10. Secretaria Municipal de Saúde do Rio de Janeiro. Boletim Epidemiológico: tuberculose no município do Rio de Janeiro: perspectivas e desafios [Internet]. Rio de Janeiro: Secretaria Municipal de Saúde do Rio de Janeiro; 2022 [cited on Sept 30, 2023]. Available at: https://www.subpav.org/download/impressos/boletim_epidemiologico_tuberculose_1.pdf
11. Garcia EM, Leal ML. Implementação do Programa Municipal de controle da tuberculose em Marataízes-ES, 2012. Epidemiol Serv Saúde. 2015;24(3):559-64. https://doi.org/10.5123/S1679-49742015000300023
12. Façanha MC, Melo MA, Vasconcelos FF, Sousa JRP, Pinheiro AS, Porto IA, et al. Treinamento da equipe de saúde e busca ativa na comunidade: estratégias para a detecção de casos de TB. J Bras Pneumol. 2009;35(5):449-54. https://doi.org/10.1590/S1806-37132009000500010
13. Spagnolo LML, Tomberg JO, Martins MDR, Antunes LB, Gonzales RIC. Detecção da tuberculose: a estrutura da atenção primária à saúde. Rev Gaúcha Enferm. 2018;39:e20180157. https://doi.org/10.1590/1983-1447.2018.20180157
14. Pelissari DM, Bartholomay P, Jacobs MG, Arakaki-Sanchez D, Anjos DSO dos, Costa ML dos S, et al.. Offer of primary care services and detection of tuberculosis incidence in Brazil. Rev Saúde Pública [Internet]. 2018 [acesso em 15 jun. 2025];52:53. Disponível em: https://doi.org/10.11606/S1518-8787.2018052000131.
15. Lopes LMG, Vieira NF, Lana FCF. Análise dos atributos da atenção primária à saúde na atenção à tuberculose no Brasil: uma revisão integrativa. R Enferm Cent O Min. 2015;5(2):1684-703. https://doi.org/10.19175/recom.v0i0.678
16. Souza CF, Ben AJ, Schneider SMB, Nascimento BP, Neumann CR, Oliveira FJAQ. A importância das ações programáticas de saúde no controle da tuberculose: experiência de um serviço de atenção primária à saúde em Porto Alegre, Rio Grande do Sul, Brasil. Clin Biomed Res. 2014;34(2):175-83.