Qualidade dos registros da tuberculose no sistema de informação de notificação: perspectivas de apoiadores e digitadores distritais

Quality of tuberculosis records in the notifiable diseases information: perspectives of district supporters and typists

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RESUMO

Apesar dos múltiplos esforços realizados em todo o mundo, a tuberculose (TB) continua sendo um problema de saúde pública e um grande desafio para os países com uma carga maior da doença. O sistema de vigilância epidemiológica (VE) da TB tem papel primordial nas atividades de prevenção e controle dessa doença. Este estudo tem como objetivo conhecer a perspectiva de apoiadores técnicos e digitadores sobre o registro de dados no SINAN acerca da tuberculose de uma capital do Norte do país. Estudo qualitativo, exploratório, realizado com oito apoiadores técnicos e digitadores. Os dados foram coletados por entrevista semiestruturada no período de janeiro a junho de 2022 e submetidos à análise temática. Expressos em duas categorias: Compromisso com a qualidade dos dados e Desafios no preenchimento e busca das informações. As principais limitações dos registros de dados estão relacionadas à qualidade dos dados enviados pelas unidades básicas de saúde e à falta de articulação entre os sistemas de registro. Há fragilidades em vários pontos do sistema, apontando a necessidade de investimento para a integração dos sistemas de registro, sensibilização dos profissionais sobre preenchimento adequado das informações; e elaboração de estratégias informatizadas que otimizem o processo de registro.

PALAVRAS-CHAVE: Tuberculose. Notificação de Doenças. Sistemas de Informação.

ABSTRACT

Despite multiple efforts around the world, tuberculosis (TB) remains a public health problem and a major challenge for countries with a higher burden of the disease. The TB epidemiological surveillance (ES) system plays a key role in TB prevention and control activities. The aim of this study was to get to know the perspective of technical supporters and typists on the recording of tuberculosis data in SINAN in a capital city in the north of the country. This is a qualitative, exploratory study carried out with eight technical supporters and typists. The data was collected through semi-structured interviews between January and June 2022 and subjected to thematic analysis. They were expressed in two categories: Commitment to data quality and Challenges in filling in and searching for information. The main limitations of the data records are related to the quality of the data sent by the basic health units and the lack of coordination between the recording systems. There are weaknesses at various points in the system, pointing to the need for investment in integrating the recording systems, raising awareness among professionals about how to fill in the information properly, and developing computerized strategies to optimize the recording process.

KEYWORDS: Tuberculosis. Disease Notification. Information Systems.

INTRODUCTION

Despite multiple efforts around the world, tuberculosis (TB) remains a public health issue and a major challenge for countries with a higher burden of the disease. The World Health Organization (WHO) shows results well below the targets set for the period of 2015-2022 for the eradication of TB in the world: the reduction in incidence was 8.7% (target of 50% by 2025), and the reduction in deaths was 19% (the target was 75% between 2015 and 2025). For the period from 2018 to 2022, 84% of the 40 million people with the disease were treated (71% of the 3.5 million children received treatment), and less than half of the annual funding needs were met[1].

In 2021, based on the WHO agenda for the elimination of TB, Brazil's Ministry of Health (MS) launched the National Plan to End Tuberculosis as a Public Health Problem, with strategies for 2021-20252. The plan is structured around three pillars: 1. Prevention and integrated person-centered care for TB patients; 2. Bold policies and support systems; 3. Intensification of research and innovation. These pillars were updated according to current recommendations for TB control and revised to incorporate person-centered language[2].

The second pillar concerns bold policies and the support systems, which include meeting the needs of TB surveillance, integrating systems, and strengthening the use of information systems for the registration case2. This underscores the importance of having an adequate information system for the effective from the disease control.

Further contributing to the strategies indicated by the WHO and the Ministry of Health, the Interministerial Committee for the Elimination of Tuberculosis and Other Socially Determined Diseases (CIEDDS - Comitê Interministerial para a Eliminação da Tuberculose e de Outras Doenças Determinadas Socialmente) was established by Decree No. 11,494, in April 2023. This Committee aims to promote actions that will contribute to the elimination until 2030 of tuberculosis and other socially determined diseases as public health problems in the country[3].

In the process of eliminating TB, the tuberculosis epidemiological surveillance (ES) system plays a key role in prevention and control activities. This system must be capable of identifying trends, geographic areas, and population groups most susceptible to TB. Therefore, it is necessary to ensure the reliability, completeness, and up-to-date of notification data, as they are fundamental for prevention activities. Through these data records, it is possible to monitor TB and improve disease control in the country, as well as support decision-making by the National TB Control Program (PNCT)[4-7]. Such data are also essential for analyzing notification trends and case detection, requiring the strengthening of systems to address not only TB but also drug-resistant cases or co-infections, such as HIV and Covid, for example[8].

The Notifiable Diseases Information System (SINAN -Brazilian Disease Notification Information System) is considered the most important system for ES in the country. This system

is fed by notifications and investigations of cases of diseases and illnesses that integrate the list of compulsorily notified diseases[4].

One of the greatest challenges for Epidemiological Surveillance (ES) in the control of TB is ensuring the quality of information systems and, consequently, the reliability of data[7]. The low quality of data has a significant impact on fulfilling the purpose for which an information system was developed. This happens because the data will not reflect the reality, masking epidemiological data and and preventing visualization of the impact t of TB control program actions. It may also interfere with clinical care, appropriate decision-making, and the allocation of resources and public policies[9].

Studies have been conducted in Brazil and other countries with the aim of evaluating the quality of TB data records from a quantitative perspective, showing that they do not meet the standards established by official bodies such as the Ministry of Health (MOH) and the World Health Organization (WHO)[10-17]

The quality of the data depends on different elements, including the records made by professionals responsible for reviewing/qualifying the data and its digitization. Therefore, it is important to understand the perspective of these professionals regarding the work they perform and the elements that affect this process, in order to identify areas for improvement. This study aligns with the National Plan to End Tuberculosis and aimed to explore the perspective of district technical supporters and data entry clerks on the recording of TB data in SINAN (Brazilian Disease Notification Information System), in a municipality in the northern region of the country

METHODOLOGY

This is a qualitative, exploratory study conducted in four of the five health districts in Manaus (AM - AMAZONAS), located in the northern region of Brazil. The selection of the districts was intentional, including one rural district and three urban ones.

Manaus, the capital of the state of Amazonas, stands out for having the highest incidence of TB (113.2/100,000 inhabitants) among the capitals of Brazil. Additionally, it holds the second highest mortality rate due to TB (5.9/100,000 inhabitants)[18].

In Manaus (AM-AMAZONAS), health surveillance activities are carried out by the Departments of Environmental and Epidemiological Surveillance (DEVAE) and the Health Districts (DISA), which form part of the organizational structure of the Municipal Health Department (SEMSA)[19]. The management of SINAN (Brazilian Disease Notification Information System) is located within Departments of Environmental and Epidemiological Surveillance (DEVAE). Information on notifiable diseases is entered into SINAN (Brazilian Disease Notification Information System) by professionals in the Health Districts (DISA), which serve as data entry

units. Thus, the completed notification forms from the Basic Health Units (UBS) are found in these establishments. In each Health Districts (DISA), there is a health surveillance team made up of higher education and technical-level professionals, responsible for reviewing and entering the data from the notification forms into SINAN (Brazilian Disease Notification Information System).

The study included four technical supporters (nurses, a licensed practical nurses , and a community health agent- a public health worker who gathers information on the health of a community by building close relationships with its members) and four district data entry clerks (one from each selected district). The district technical supporters are responsible for evaluating and correcting the information on the notification forms, while the district data entry clerks are responsible for entering the information into SINAN (Brazilian Disease Notification Information System). All professionals responsible for entering information into SINAN, as well as those responsible for evaluating and correcting these forms, with a minimum of six months of experience in the role, were interviewed. Thus, eight healthcare professionals who met the established criteria were interviewed. There were no refusals from any potential participants.

After the Municipal Health Department and the district coordinators agreed to carry out the study, the participants were invited in person and individually by the lead researcher. The study objectives were presented, the form of participation was clarified, and the interviews were scheduled.

Two interview guides were used—one directed at the technical supporters and another at the data entry clerks—since the roles performed by both are different. Pilot tests of the routes were performed, applying them in advance to a technical supporter and a data entry clerk from one of the health districts, in order to assess their suitability and clarity. As the original interview guides did not undergo significant modifications after this application, the pilot interviews were included in the study's final sample.

The interview guide for the technical supporters included questions about: the process of evaluating and validating the quality of the TB notification form data; main challenges identified; strategies for solving the challenges identified; continuing and permanent education; and the influence of data entry into SINAN (Brazilian Disease Notification Information System) on other TB control actions. Nevertheless, the interview guide for the district data entry clerks included questions about: the work of a data entry clerk; the trajectory of the notification form between professionals until it reaches the data entry clerk; doubts during the process of validating the information recorded on the TB notification form; main difficulties in the data entry process; the importance of the results obtained through the entry of TB information into SINAN (Brazilian Disease Notification Information System); and suggestions for improving the quality of SINAN (Brazilian Disease Notification Information System) information.

The data were collected by the lead researcher, a master's degree nursing student at the

time, with no prior relationship with the participants and no conflict of interest from January to June 2022. For this purpose, the semi-structured interview technique was used, conducted individually, in person, in the workplace, in a private room—to ensure the anonymity of the participants—with an average duration of 27 minutes. To ensure the trustworthiness of the content, the interviews were recorded and fully transcribed.

After transcription, the content was transferred to the Atlas.ti 7.0 software. A single project, named Hermeneutic Unit, was created for organizing the data and developing families and thematic categories. The data were analyzed using thematic analysis, aiming to integrate attention, description, and interpretation through phases of reading, coding, thematization, and interpretation in flexible transitions. From reading, engagement, and capturing the main ideas, codes emerged that were able to describe the concepts revealed in the dataset. This coding process underwent controls and successive revisions, taking into account the context of the interviewees and the object of study, as well as the researchers' experiences, which were fundamental to the interpretive process. Thus, these codes were combined and formed themes/categories iteratively, ensuring that the interpretation represented the participants' perspectives. The simultaneously descriptive and interpretive approach was concerned with providing a contextualized and comprehensive understanding of the object, as well as ensuring that the findings were qualified and sufficient, as well as substantially treated, with no new codes emerging, indicating the saturation of the data collection process and the analytical process[20].

In this process, 42 identified codes constituted eight themes, organized into two categories: Commitment to data quality and Challenges in filling in and searching for information. The interpretation of these findings was supported by the literature. All stages of the analysis were conducted by the first two researchers.

The study was approved by the Research Ethics Committee of the School of Health Sciences at the State University of Amazon – UEA (opinion n.º 5.177.971; CAAE – Certificate of Presentation for Ethical Consideration n.º 54423921.6.0000.5016), and approval from the institution where the study was conducted. The procedures adopted in this research complied with Resolution No. 466, dated December 12, 2012, of the National Health Council. All participants signed the Informed Consent Form (ICF), and to ensure anonymity, interview excerpts are identified by the letter A (technical supporter) and D (data entry clerk), followed by the interview number.

RESULTS

Eight professionals participated in the interviews, these included six nurses, one licensed practical nurse and one Community health workers (CHWs) . Four perform the function of data

entry clerk, three of technical supporter, and one a dual function (data entry clerk and technical supporter). Regarding distribution by district, three were from the South District, two from the West, two from the North, and one from the Rural District. The majority were female (seven), with ages ranging from 39 to 49 years (average of 44 years), and their length of service in the institution varied from one to 10 years (average of six years).

Technical supporters have responsibilities such as evaluating data quality, providing technical support, and conducting training sessions. Nevertheless, the data entry clerks, have the exclusive task of entering the information from the forms after they have been evaluated by the technical staff (nurse), but they try to remain attentive to contribute to the search for and quality of the information.

The thematic analysis process is expressed in two categories: Commitment to data quality and Challenges in filling out and searching for information. These categories, along with the respective topics covered, are presented in Figure 1.

Figure 1- Categories and themes covered
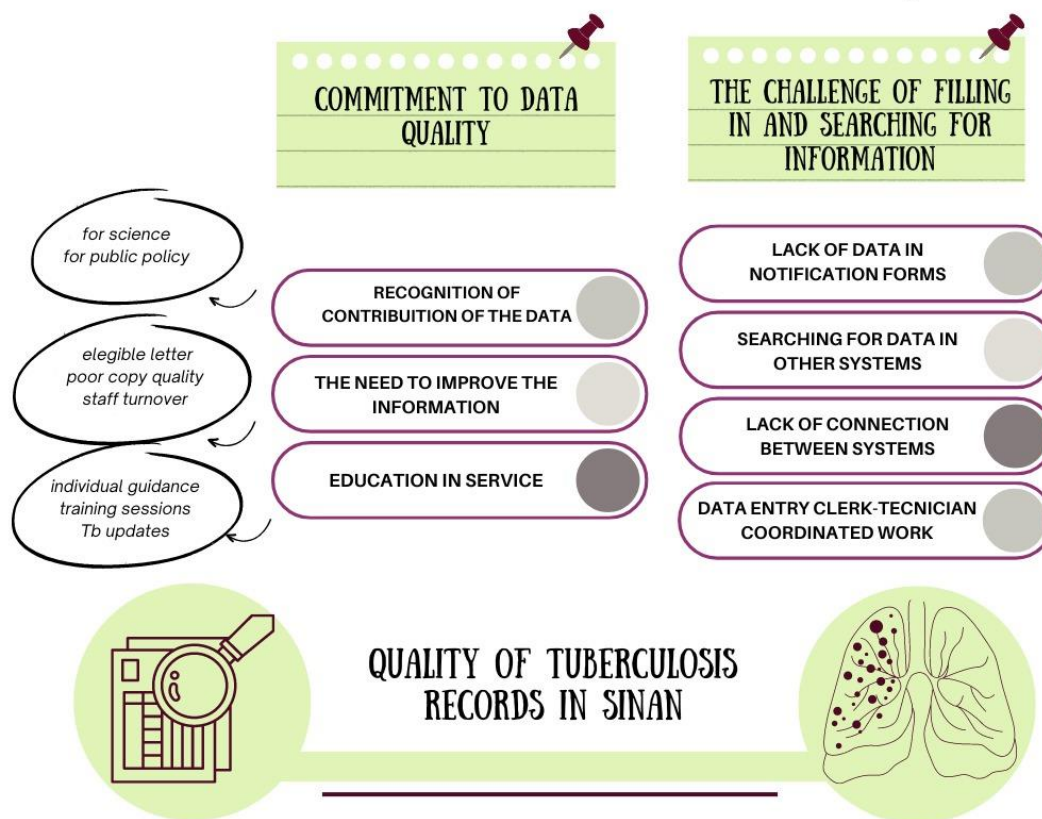
Source: Elaborated by the authors, canvas, 2022

Commitment to Data Quality

The participants attributed meaning to their roles and practices, showing an understanding

that the quality and reliability of data are necessary to understand the epidemiological profile of the population, conducting studies, and supporting the development of regulations and guidelines. The information entered into SINAN plays a relevant role, as it serves as a resource for case management, TB prevention measures, and mapping the epidemiological profile of the population.

> "There is concern not only with data collection but also with its quality and security in use, since it influences the establishment of new policies for the care of people with TB. The reports revealed a sense of pride tied to the recognition of the work they perform, both from data entry clerks and technical supporters. "I tell them [referring to the professionals at the health units], 'we are here for care, but there are health professionals who are here for science.' So the studies, the scientific part of health, the results of these studies are going to create norms and guidelines to try to intervene in that problem that is being identified in the database. From there, public health policies will be created to intervene the issue; therefore, our responsibility is to deliver a qualified database so that they can do their part, which is to analyze the data." (A4).

> "We have to show this to the population, and these indicators are also important for funding, so that the program can work here in X. That's why SINAN is important; it is the foundation, the database for numerous actions regarding TB, both for funding and for directing actions, directing actions in a certain neighborhood or unit." (D1)

Overall, the participants indicated that the forms come well-filled out from the Basic Health Units (UBS), as if they did not want to criticize the work done at these UBS. However, throughout the interviews, there is recognition that not all of them have the necessary quality..

> "[...] but I think at least half of the forms are filled out regularly or poorly completion, and then I think that 40% come good and 10% are excellent (laughs). And we try to at least take those 50% that are regular or poor and make them at least good, at least with the main data that I can access, which is in the GAL system [Laboratory Environment Manager]. My job is to make those poor forms at least good." (A4).

The reasons pointed out for the lack of data quality are centered on two main issues: poor form completion and staff turnover. What makes understanding the form difficult is the illegibility of the handwriting or the quality of the photograph of the form, which is sent via WhatsApp or email. The accounts indicate that there is an effort to understand the information, but when it is not possible, the health professional from the Basic Health Unit is contacted to request clarification. They understand that they cannot "guess" what is written, as this could lead to incorrect data being recorded, which they consider very serious. "Some people have handwriting that's hard to understand, which complicates the work. We joke about sending them a handwriting course. We tried to implement a tool, but it depends on the version of the PDF or the type of PDF application each unit is using. [...] When a notification comes fully filled out in the PDF, all organized, it's wonderful!" (D1).

"Handwriting is a problem, but when the SUS number, for example, is there and we can't read the patient's name, we usually open another system, enter the SUS number, and it automatically provides the correct information about the patient, and then I correct it so we don't waste too much time, you know, but they pass this information to the unit manager." (D3).

Staff turnover at the Basic Health Units (UBS) is frequent, which requires district supporters

to manage this situation to improve form completion. They state that there are periodic training sessions on TB and SINAN, but they acknowledge that the main way to improve the quality of the information is by going to the UBS and engaging with the professionals. Returning the form to the notifying unit is seen as a pedagogical strategy. The greatest difficulty is with doctors, who do not like filling out fields (beyond the medical diagnosis) and resist following the guidelines.

> "In the units, we are experiencing these changes. Professionals change, some leave, some retire, so it's a big challenge because we have to be there. We, who are part of the district program, must always be present in the units and provide training, constantly updating them." (D6).

> "In relation to the health units, when we detect a need, we provide on-the-job training. Staff turnover is one of the situations that requires us to visit the unit more frequently. [...] We will sit with the staff, go item by item, and if necessary, discuss each one. The goal is to identify where they are making mistakes so they can fill out the forms correctly." (A2).

> "The doctor does not fill out residential information; they only fill out the name. Our main challenge isn't really with the nurse, but with the doctor. The doctor doesn't like doing notifications. They don't fill out identified contacts, which is another problem." (A7).

Another concern is keeping the professionals at the Basic Health Units (UBS) updated with new Technical Notes from the Ministry of Health (MS), or any new legislation or technical recommendations. They seek to maintain control of the guidelines provided, with records signed by the professionals.

> "These new staff members that joined, we explained the service to them on the front lines. When a technical note is issued, since I am responsible for this part of the tuberculosis program here in the rural district, we go to the front lines and explain everything to them, and we ask them to sign a protocol, so everything is properly recorded." (A5).

Although mentioned by only a few interviewees, there are suggestions to improve the conditions for filling out the notification form. They believe that to improve the quality of the records, more engagement from the professionals at the Basic Health Units (UBS) is needed, as well as the use of tools to optimize the notification process and the transfer of information to the team.

> "I think to improve, there needs to be more interest on the front lines [...] because sometimes we conduct training in the unit for ten people, but five or six attended that training and either forget or can't pass it on to the new staff." (D6)."There's the regular PDF and there's Foxit PDF. Foxit [...] has a tool called the typewriter, we use this tool to fill out a PDF file [...] some small health units were using it, and my colleague and I trained them." (D1).

The commitment to data quality is the central theme in the statements of both the data entry clerks and the technical supporters, reflecting their dedication to performing their tasks in the best way possible. The difficulties they face stem from issues beyond their scope of work and are related to structural problems within the healthcare system.

Challenges in Filling Out and Retrieving Information

Notification forms are the fundamental element for data to be recorded in SINAN (Brazilian Disease Notification Information System) and for medications to be released. These forms are sent to the Health District by UBS professionals via email, WhatsApp, or on paper delivered directly to the District, as mentioned earlier. The main limitations in the process of typing, evaluating, and validating the TB notification form were: forms with blank fields; fields filled in as "unknown"; fields with erasures or illegible handwriting; errors in completion; and inconsistencies in the information.

Essential fields such as phone number, residential data, special populations, associated diseases and conditions, beneficiary of government income transfer programs, address, race, education level, sensitivity testing are often left blank by the professional at the notifying unit. These pieces of information should be obtained by the UBS professional when they are with the person with TB, because it becomes difficult to obtain them later. However, the problem is not always related to the professional. It may be that people with TB provide incorrect information or refuse to provide it.

> "We have a problem with the addresses of patients who are in prison. Why? The professionals or even the prisoners themselves don't provide their address, and the professionals end up either not entering it or making one up. That happens too, they end up using the prison address, you know, and that's a problem." (A2).

> "The biggest difficulties we notice here are sometimes in filling out the person's data. Sometimes we try to get the phone number and it's wrong, the address is wrong, but it's not the professional's fault, it's the patient's. Sometimes the patient provides information so that we can't reach them." (A7).

To obtain the data, they use other systems such as the Citizen's Electronic Health Record (PEC - Prontuário Eletrônico do Cidadão) or the Laboratory Environment Manager (GAL-Gerenciador de Ambiente Laboratorial), where they seek to access missing information from the forms. When they are unable to obtain the data from other systems, they request additional information from the professionals at the units. There seems to be some distrust regarding the effort of these professionals when filling out the information, as they often select the "unknown" option and may even fabricate the information, as mentioned in the previous statement.

> "The system has come to help a lot, as the director here says 'today it's like a Big Brother (tv show)', today you can't say that you didn't do it, that you didn't go, where you didn't go, so we know where you sent everything, when you did the medical exams. But the systems still don't communicate with each other, so I have to work with five systems that don't connect, and this requires constant monitoring. It's a part that demands a lot of time from the tuberculosis team, monitoring this patient, because when I get here and I see 'culture 3 in progress' I'll have to go into the GAL (Laboratory Environment Manager) to see if this patient's culture has arrived, then I'll say 'has he been discharged, has he been transferred to the ICAM(Amazonas Child Health Institute)?', and how do I check that in ICAM (Amazonas Child Health Institute)? I need to have a professional from there who can help with this, if I don't have one, I'll have to go there to visit; with our units, it's easier for me to deal with the PEC (Citizen's Electronic Health Record), [...] then these various systems

require a lot of time, and they are systems that may have different information" (A7)."

In the technical supporter's statement, there is a criticism of the lack of integration between the systems, which leads to a workload increase, as they are not only responsible for TB records but also for other notifiable diseases.

Both the technical supporters and the data entry clerks understand the importance of entering the requested information on the forms—not only for identifying new cases but also for following up on cases until they are closed with a cure. While the case remains open, they can enter new information obtained or modify previously recorded or missing information. However, they acknowledge that this search for data has its limits and may sometimes, maintain a record of ignored information.

> "It is important for the notification form to be entered into the system because it feeds the Ministry of Health's system, from which the core team extracts all the information. So, at the municipal level, that's how we can monitor this patient—he is in SINAN (Brazilian Disease Notification Information System). But then, several months have passed and no new exams have been registered, let's call the unit to find out if the patient is still there, if it was a case of abandonment, or if it was transferred. At the state level, since we can know if the patient moved to another state; we put his name in the state group and find out if he's in any city, if someone has received him" (D6).

> "The data that we didn't complete at the time of closure are complemented later. So, we have six months of follow-up for this user to ensure good quality and resolve any pending issues from the initial notification" (A7).

There is, therefore, a coordinated effort between data entry clerks and technicians. The data entry clerks consult with the technicians when they identify any issues with the form that has gone through its review, or they even seek the information in other systems. However, they always maintain communication and praise their colleagues' work. One of the elements that the technical supporter acknowledges as important for the quality of the data entry clerks' work is the retention of trained workers in the same role and field of activity.

DISCUSSION

Studies have been exploring aspects of underreporting and the quality of TB[8-12, 16], however, no studies have been identified that explore the perceptions of those responsible for entering records into the system. The perception of these professionals allows us to understand the challenges they face in entering records into the system, their commitment to data quality, and the solutions they propose to overcome the identified problems.

One of the relevant findings of the study is the understanding that both the data entry clerks and technical supporters have regarding the importance of their entries in the system. They know they contribute to the development of health policies and to the conduction of scientific research.

This perception shows that they understand how their work fits into the health network, moving beyond a reductionist view of simply being a data entry clerk or a technical supporter. The fact that TB has been a notifiable disease since 1998, along with the ongoing training the technicians receive, the requirements from the Ministry of Health, and the investment made by this ministry in the TB Control Program, all seem to contribute to this outcome.[10,16].

A computerized system like SINAN (Brazilian Disease Notification Information System) still relies on manually submitted information sent to the Health Districts, leading to some associated problems, such as illegible handwriting and lack of completeness of information. This situation should improve with an integrated system, where service professionals could submit information that is already digitized, but this is not yet a reality. Even the integration between existing record systems has not yet been implemented, requiring professionals to consult various systems to better qualify the information provided by the service.

In order to overcome this diversity of information provided by different systems, even with inaccuracies (such as spelling error),a group of Brazilian researchers proposed the development of an information system using system interoperability techniques based on the Semantic Web paradigm[21-22].

The system, offered through an application, aims to provide a single, organized, and complete database of the population served. Although this is an important proposal, it does not solve the fundamental issue, which would be single information system, preventing technical supporters and data entry clerks from having to perform different searches to obtain information that should be automatically accessible when entering the record of a person with TB.

Electronic medical records used in Primary Health Care (PHC) could have new functionalities, enabling the integration between health information systems, promoting the modernization and integration of records. Thus, the use of electronic medical records with integrated information would facilitate the work of health professionals, reducing human errors in data communication and, consequently, increasing the reliability of the information provided. Furthermore, the use of electronic medical records can speed up the notification and monitoring process of cases, improving the response to outbreaks and the planning of public health actions.

Reports of difficulties in obtaining data to be entered into SINAN (Brazilian Disease Notification Information System) are also reflected in studies that highlight the reality of this incompleteness, which, however, has been improving. A study conducted in five Brazilian capitals, with data from 2001 to 2010, assessed the completeness of TB notification and follow-up forms, indicating that none of the capitals showed more than 70% of the variables in category 4 (75 to 100% completeness), which is below the desired level. [23]. More recent studies, conducted in Santa Catarina and Rio Grande do Sul, despite showing better data completeness than the previously mentioned study, still did not meet the Ministry of Health's recommendations[16,24] and

could be improved.

Health actions are planned based on SINAN (Brazilian Disease Notification Information System) data related to TB, making it important for professionals to receive feedback on the information to motivate them and help them recognize the importance of properly and accurately filling out the forms.[25].

According to the technical supporters and data entry clerks who participated in the study, there are various problems involved in the completion of forms by professionals, whether due to the high turnover of professionals at the UBS, the resistance of people with TB to providing correct information, or even the suspicion that the professionals' information may not be accurate (made up). Each of these problems raises reflections on the commitment that professionals should have in providing information.

These difficulties were similar to those reported in Primary Health Care services in the treatment of TB, which, among other problems, identified low involvement of professionals in TB control actions, high turnover of professionals, and weaknesses in the professional training process.[26].

Technical supporters consider continuous education an important resource to overcome the identified challenges. It should include strategies such as individual approaches with visits to the units, frequent updates on new Ministry of Health (MS) regulations, and annually scheduled training sessions. Additionally, using less formal strategies, such as individual calls and direct requests for data completion, can be useful resources. The ongoing training of professionals for case notification and proper record keeping is seen as necessary but is not always carried out effectively, record keeping is seen as necessary but is not always carried out effectively[11,27]. The limitations of the training system for technicians who work directly or indirectly with SINAN (Brazilian Disease Notification Information System) are acknowledged. [25]. In-service training is proposed by the Ministry of Health as an essential element for TB control, indicating that it contributes to the effectiveness of the actions[28,29].

It can be observed that data entry clerks and technical supporters are personally committed to providing complete and trustworthy information, but there are many obstacles to be overcome, especially regarding the existing infrastructure. Although SINAN (Brazilian Disease Notification Information System) is a system with the necessary information, its proper completion depends on an entire network that involves users, health service professionals (primary care and other spaces where people with TB are diagnosed), health district staff, and the structure of the systems themselves, which are not interconnected.

FINAL CONSIDERATIONS

Despite the individual efforts of technical supporters and data entry clerks to provide complete and trustworthy information, there are still obstacles, such as the reliance on manual systems, the lack of integration between systems, and the difficulty in obtaining accurate data. This situation highlights the importance of seeking solutions to improve the structure and functionality of the information system in order to facilitate the proper recording of tuberculosis-related information. Strategies such as the implementation of an integrated system and the continuous training of professionals can help overcome these challenges and promote the quality of the recorded data.

It is crucial to maintain a continuous commitment to the quality of tuberculosis data, overcoming the identified challenges and promoting actions that improve the completion and retrieval of information, in order to ensure the quality and integrity of the data in the system. Only in this way will it be possible to strengthen epidemiological surveillance (ES), base health policies, and promote the effectiveness of tuberculosis control actions.

As a vulnerability of the study, we point out the exclusion of professionals from Basic Health Units (UBS), which would have allowed a better understanding of their practices and limitations regarding the process of recording TB notification forms.

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