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RESEARCH

COMPLETENESS OF PULMONARY TUBERCULOSIS DATA IN ADULTS REPORTED IN BELO HORIZONTE, MINAS GERAIS, FROM 2001 TO 2020: CROSS-SECTIONAL STUDY

COMPLETUDE DOS DADOS DE TUBERCULOSE PULMONAR EM ADULTOS NOTIFICADOS EM BELO HORIZONTE, MINAS GERAIS, DE 2001 A 2020: ESTUDO TRANSVERSAL

EXHAUSTIVIDAD DE LOS DATOS SOBRE TUBERCULOSIS PULMONAR EN ADULTOS NOTIFICADOS EN BELO HORIZONTE, MINAS GERAIS, DE 2001 A 2020: ESTUDIO TRANSVERSAL

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ABSTRACT

Objective: to analyze the completeness of notification forms and monthly monitoring of cases of pulmonary tuberculosis in adults reported in Belo Horizonte, between 2001 and 2020. **Methods**: this is a descriptive study of cases of pulmonary tuberculosis in adults, reported in the Notifiable Diseases Information System of Belo Horizonte, covering the period from 2001 to 2020. The completeness of the fields was classified as "excellent", for values equal to or greater than 90%; "regular", for those between 70 and 89.9%; and "poor", for rates below 70%. **Results**: 16,904 cases of tuberculosis were reported during the period in question. It was observed that the completeness of sociodemographic information was classified as regular or poor. Regarding completeness, data related to the clinical situation and case closure were classified as regular; data relating to diagnostic tests, monitoring and directly observed treatment were classified as poor. Only mandatory variables achieved completeness rated as excellent. **Conclusion**: failure to complete or inadequately complete notification forms creates a false impression of completeness, a situation that may compromise the accurate identification of the reality of the disease and the possible repercussions of treatment.

Keywords: Tuberculosis, Pulmonary; Primary Health Care; Health Information Systems; Notification; Database.

RESUMO

***Objetivo**: analisar a completude das fichas de notificação e do acompanhamento mensal dos casos de tuberculose pulmonar em adultos notificados em Belo Horizonte, entre 2001 e 2020. **Métodos**: trata-se de um estudo descritivo dos casos de tuberculose pulmonar em adultos, notificados no Sistema de Informação de Agravos e Notificação de Belo Horizonte, abrangendo o período de 2001 a 2020. A completude dos campos foi classificada em "excelente", para valores iguais ou superiores a 90%; "regular", para aqueles entre 70 e 89,9%; e "ruim", para índices abaixo de 70%. **Resultados**: foram notificados 16.904 casos de tuberculose no período em questão. Observou-se que a completude das informações sociodemográficas foi classificada como regular ou ruim. Quanto à completude, os dados relacionados à situação clínica e ao encerramento dos casos foram classificados como regulares; já os dados referentes aos exames de diagnóstico, ao acompanhamento e ao tratamento diretamente observado foram classificados como ruins. Apenas as variáveis de preenchimento obrigatório alcançaram uma completude classificada como excelente. **Conclusão**: o não preenchimento ou o preenchimento inadequado das fichas de notificação gera uma falsa impressão de completude, situação essa que pode comprometer a identificação precisa da realidade da doença e das possíveis repercussões do tratamento.*

***Palavras-chave:** Tuberculose Pulmonar; Atenção Primária à Saúde; Sistemas de Informação de Saúde; Notificação; Base de Dados.*

RESUMEN

***Objetivo**: analizar la integridad de los formularios de notificación y seguimiento mensual de los casos de tuberculosis pulmonar en adultos notificados en Belo Horizonte, entre 2001 y 2020. **Métodos**: se trata de un estudio descriptivo de los casos de tuberculosis pulmonar en adultos notificados en el Informativo de Enfermedades de Belo Horizonte. y Sistema de Notificación, que abarca el período de 2001 a 2020. La integridad de los campos se clasificó en "excelente", para valores iguales o superiores al 90%; "regular", para aquellos entre 70 y 89,9%; y "malo", para tasas inferiores al 70%. **Resultados**: en el período en cuestión se notificaron 16.904 casos de tuberculosis. Se observó que la integridad de la información sociodemográfica se clasificó como regular o mala. En cuanto a la exhaustividad, los datos relacionados con la situación clínica y el cierre del caso se clasificaron como regulares; los datos relacionados con los exámenes de diagnóstico, el seguimiento y el tratamiento observado directamente se clasificaron como deficientes. Sólo las variables obligatorias alcanzaron la completitud clasificada como excelente. **Conclusión**: la falta de cumplimentación o cumplimentación inadecuada de los formularios de notificación genera una falsa impresión de exhaustividad, situación que puede comprometer la identificación precisa de la realidad de la enfermedad y las posibles repercusiones del tratamiento.*

***Palabras clave:** Tuberculosis Pulmonar; Atención Primaria de Salud; Sistemas de Información en Salud; Notificación; Base de datos.*

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INTRODUTION

Characterized as a global public health problem, tuberculosis (TB) represents the ninth leading cause of death in adults, in addition to being considered a reemerging disease in developed countries[1]. In Brazil, TB is a persistent problem, reflecting the country's level of socioeconomic development and deficiencies in the organization and management of health systems[2]. Some factors associated with the diagnosis and high prevalence of TB include the lack of basic health services, poverty, alcohol, tobacco and other drug abuse, history of incarceration, population in situations of social vulnerability, co-infection of tuberculosis with the human immunodeficiency virus (TB-HIV) and the association of tuberculosis with diabetes mellitus (TB-DM)[3].

It is estimated that, in 2021, 10.6 million people were affected by TB worldwide, corresponding to an incidence of 134 cases per 100,000 inhabitants[4]. In Brazil, in the same year, 68,271 new cases of TB were reported, which corresponds to an incidence coefficient of 32 cases per 100,000 inhabitants[5]. In the state of Minas Gerais, 3,021 new cases of TB were reported, equivalent to an incidence of 14 cases per 100,000 inhabitants[6]. In this state, the health macro-region with the highest number of cases, between 2015 and 2020, was the central (35.43%), where Belo Horizonte city is located[7].

Understanding the sociodemographic and clinical profile of TB cases, as well as associated complications and strategies for monitoring and closing cases, became possible in Brazil with the creation of the Sistema Nacional de Vigilância Epidemiológica [National Epidemiological Surveillance System] in 1975 and the Sistema de Informação de Agravos de Notificação [Notifiable Diseases Information System] – SINAN in 1993. The latter institution established that reporting diagnosed cases in the databases of these systems in the national territory is mandatory[8]. Adequate reporting allows for case investigation, treatment monitoring and the continuous consolidation and assessment of data for TB control in Brazil[9]. SINAN is a tool that enables epidemiological analyses to identify risk situations, plan public policies and develop prevention and health promotion actions[10].

Challenges for monitoring and health surveillance of TB cases include high rates of treatment abandonment, low contact investigation, low levels of directly observed treatment (DOT) and incomplete data on notification and monitoring forms[11-13]. Complete data is essential for epidemiological surveillance of TB, and is considered a marker of quality, enabling knowledge of the development of the disease, the priorities for interventions and the evaluation of the actions developed[11]. In a city as complex as Belo Horizonte, complete data is essential for effective strategic planning, allowing more efficient use of resources and the planning of health actions that respond to the needs of the population. Thus, combating TB requires an approach that involves both curative actions and epidemiological surveillance and social protection policies[13].

The need to update and correctly fill out tuberculosis diagnosis and following-up records is recognized, with high levels of completeness, to guarantee quality information. The analysis of the completeness of records in the SINAN/TB database is crucial to assist healthcare professionals and managers in the evaluation and qualification of TB epidemiological surveillance. The objective of this study was to analyze the completeness of notification forms and monthly monitoring of cases of pulmonary TB in adults reported in Belo Horizonte, between 2001 and 2020.

METHODS

Descriptive study carried out with data from the Tuberculosis Notification Form and Monthly Tuberculosis Monitoring of SINAN in the city of Belo Horizonte, between 2001 and 2020. The notification form is a physical questionnaire, completed by health services at local, state and federal levels, with the notification of TB cases being the responsibility of healthcare professionals[9]. In 2021, the incidence of TB in the municipality was 16.1 per 100,000 inhabitants[6].

The study population consisted of all cases of pulmonary tuberculosis in adults reported to SINAN in Belo Horizonte from 2001 to 2020, totaling 16,904 records. Cases of extrapulmonary tuberculosis, whether associated with pulmonary TB or not, were excluded. The study variables included:

a) sociodemographic: gender (female and male), age, race (white, black, yellow, brown, and indigenous), education (illiterate, incomplete elementary school I, complete elementary school I, incomplete elementary school II, complete elementary school II, incomplete high school, complete high school, incomplete higher education, complete higher education), people deprived of liberty, homeless people (HP), immigrants, and beneficiaries of government income transfer programs (yes or no to answer each item);

b) clinical and closing status: type of entry (new case, relapse, re-entry, transfer and post-death), closing status (cure, abandonment, death from tuberculosis, death from other causes, transfer, change of diagnosis, drug-resistant tuberculosis, change of regimen, failure, primary

abandonment, continuation of treatment), and diseases such as AIDS, alcoholism, diabetes, mental disease, drug use and smoking (yes or no to answer each item);

c) diagnostic tests, follow-up tests and the DOT: first and second sample bacilloscopy, HIV test, chest X-ray, rapid molecular test for TB (TRM-TB), histopathology, sputum culture, sensitivity test and monthly follow-up bacilloscopy up to the sixth month, in addition to the one performed after the sixth month of treatment and the DOT (yes or no to answer each item).

Variables such as "government beneficiary", "HP", "immigrant people", "drug abuse", "smoking abuse" and "TRM-TB" were incorporated into the notification form from 2015 onwards.

Completeness refers to the degree of completion of the variable, assessed by the number of notifications. For the analysis, the stratification of completeness into "excellent", "regular" and "poor" was considered, where: "excellent" corresponds to completion greater than or equal to 90%; "regular", 70 to 89.9% completion; and "poor", filling in the variable below 70%[14]. It was decided to analyze the completeness of the variables by period – 2001-2005; 2006-2010; 2011-2014; and 2015-2020 – to allow comparison and analysis of the evolution and periods of change in the notification form[15].

Information not filled in or marked as ignored was considered as missing data. The descriptive analysis of the data focused on the completeness of the mandatory and essential fields in the tuberculosis notification and monitoring forms, differentiating the mandatory fields – essential for the inclusion of the notification in SINAN – from the essential fields, which do not prevent the insertion of the form in the system[14]. The mandatory variables analyzed were age, gender, type of entry, histopathological examination, X-ray, first sample bacilloscopy, sputum culture, HIV test and closing status. The analysis of the distribution of absolute and relative frequencies of the completeness of the variables was performed using Microsoft Excel 2019.

The study received approval from the Research Ethics Committee of the Federal University of Minas Gerais (REC-UFMG), in accordance with Resolution No. 466/2012 of the National Health Council and the guidelines and regulatory standards for research involving human beings.

RESULTS

The study sample consisted of 16,904 cases of pulmonary TB. Between 2001 and 2005, 4,917 cases were recorded; between 2006 and 2010, a total of 4,704 cases were observed; between 2011 and 2014, 3,214 cases of pulmonary TB were reported; and, between 2015 and 2020, 4,069 cases were reported.

Table 1 shows the completeness of the sociodemographic variables recorded in the TB notification forms. The variables age and gender, which are mandatory items on the form, maintained a completeness classified as excellent throughout the analyzed period. In contrast,

Table 1. Completeness of sociodemographic data in the notification form for pulmonary tuberculosis in adults aged 18 and over, in the Notifiable Diseases Information System. Belo Horizonte/MG, 2001-2020.

Variables	Period of Time (year)							
	2001-2005		2006-2010		2011-2014		2015-2020	
	%	Classification	%	Classification	%	Classification	%	Classification
Gender±	100.0	Excellent	100.0	Excellent	100.0	Excellent	100.0	Excellent
Age±	100.0	Excellent	100.0	Excellent	100.0	Excellent	100.0	Excellent
Race	68.2	Poor	78.1	Regular	78.0	Regular	88.8	Regular
Education	57.1	Poor	43.2	Poor	36.5	Poor	32.0	Poor
PPL	29.9	Poor	74.6	Regular	91.8	Excellent	89.6	Regular
PSR*	-	-	-	-	-	-	89.4	Regular
Immigrant *	-	-	-	-	-	-	89.3	Regular
Government beneficiary *	-	-	-	-	-	-	43.4	Poor

Source: Prepared by the authors based on data from SINANNET/SMSA-BH
PDL: People Deprived of Liberty;
PSR: Homeless People
* Added since 2015
± Mandatory variables to be filled in on the forms

the variable related to education presented a completeness classified as unsatisfactory. The percentage of completeness of the race variable was 68.3%, from 2001 to 2005, increasing to 88.8% from 2015 to 2020. The variables related to the type of population, inserted in 2015, demonstrated completeness considered average. The variable concerning beneficiaries of government programs was sparsely filled out and had its degree of completeness classified as unsatisfactory, 2015 and 2020, period in which it was added to the notification form.

Regarding information on associated conditions, which are non-mandatory fields, in general, they presented greater completeness throughout the period. Between 2001 and 2010, this information had a completeness considered unsatisfactory, however, from 2011 onwards, it reached a level of completeness classified as regular, except for the AIDS condition, which only achieved regular completeness from 2015 onwards (Table 2). Only the variables entry type and termination situation, which are mandatory to fill out, maintained completeness classified as excellent throughout the historical series.

Regarding information related to diagnostic and follow-up exams, it was found that the completeness of histopathological exams, X-rays, first sample bacilloscopy, sputum culture and HIV, which are mandatory items, remained excellent throughout the studied period; while the other exams presented an unsatisfactory classification, including the TRM-TB, a field inserted in the form in 2015. Information related to DOT was scarcely recorded in the analyzed period, being categorized as unsatisfactory, in most cases (Table 3).

Table 2. Completeness of clinical data and the closing status of the notification form for pulmonary tuberculosis in adults aged 18 and over, in the Notifiable Diseases Information System. Belo Horizonte/MG, 2001-2020.

Variables	Period of Time (year)							
	2001-2005		2006-2010		2011-2014		2015-2020	
	%	Classification	%	Classification	%	Classification	%	Classification
Type of entry±	100.0	Excellent	100.0	Excellent	100.0	Excellent	100.0	Excellent
Closing status±	100.0	Excellent	99.9	Excellent	99.7	Excellent	96.4	Excellent
AIDS	11.7	Poor	46.9	Poor	66.4	Poor	82.6	Regular
Alcoholism	16.7	Poor	56.5	Poor	75.7	Regular	84.6	Regular
Diabetes	4.2	Poor	50.0	Poor	72.5	Regular	84.9	Regular
Mental disease	2.2	Poor	47.7	Poor	70.5	Regular	82.6	Regular
Drugs*	-	-	-	-	-	-	79.9	Regular
Smoking*	-	-	-	-	-	-	82.9	Regular

Source: Prepared by the authors based on data from SINANNET/SMSA-BH
* Added since 2015
± Mandatory variables to be filled in on the forms

Table 3. Completeness of the diagnostic and following-up exam group, and Directly Observed Treatment in the notification form for pulmonary tuberculosis in adults aged 18 and over, in the Notifiable Diseases Information System. Belo Horizonte/MG, 2001-2020.

Variables	Period of Time (year)							
	2001-2005		2006-2010		2011-2014		2015-2020	
	%	Classification	%	Classification	%	Classification	%	Classification
BAAR 1st sample±	100.0	Excellent	100.0	Excellent	100.0	Excellent	100.0	Excellent
BAAR 2nd sample	29.9	Poor	71.6	Regular	86.8	Regular	0.1	Poor
HIV±	100.0	Excellent	100.0	Excellent	100.0	Excellent	100.0	Excellent
X-Ray±	98.7	Excellent	99.1	Excellent	98.3	Excellent	97.4	Excellent

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Table 3. Completeness of the diagnostic and following-up exam group, and Directly Observed Treatment in the notification form for pulmonary tuberculosis in adults aged 18 and over, in the Notifiable Diseases Information System. Belo Horizonte/MG, 2001-2020.

Variables	Period of Time (year)							
	2001-2005		2006-2010		2011-2014		2015-2020	
	%	Classification	%	Classification	%	Classification	%	Classification
RMT-TB*	-	-	-	-	-	-	29.9	Poor
Histopathological ±	97.8	Excellent	97.4	Excellent	95.7	Excellent	94.7	Excellent
Sputum culture ±	100.0	Excellent	100.0	Excellent	100.0	Excellent	100.0	Excellent
Sensitivity test	0.0	Poor	0.0	Poor	2.7	Poor	29.9	Poor
BAAR monitoring 1st month	2.2	Poor	58.5	Poor	66.6	Poor	58.3	Poor
BAAR monitoring 2nd month	63.9	Poor	65.3	Poor	57.6	Poor	48.0	Poor
BAAR monitoring 3rd month	1.3	Poor	43.4	Poor	52.2	Poor	44.6	Poor
BAAR monitoring 4th month	51.0	Poor	52.4	Poor	47.6	Poor	41.1	Poor
BAAR monitoring 5th month	45.1	Poor	45.8	Poor	40.8	Poor	34.7	Poor
BAAR monitoring 6th month	1.0	Poor	35.5	Poor	43.0	Poor	37.6	Poor
BAAR after 6th month	0.0	Poor	0.0	Poor	4.3	Poor	16.0	Poor
DOT Performed	3.6	Poor	64.3	Poor	82.7	Regular	55.1	Poor

Fonte: Prepared by the authors based on data from SINANNET/SMSA-BH
BAAR: Acid-Alcohol Resistant Bacillus; RMT: Rapid Molecular Test, DOT: Directly Observed Treatment.
* Added since 2015
± Mandatory variables to be filled in on the forms

Table 4 presents the variables that had less than 50% completeness, either because the field was not filled in or because the information was recorded as "ignored". It is noted that the sociodemographic variables "education" and "government beneficiary" had a high percentage of unknown records, as did the variables related to the "diabetes", "AIDS" and "mental illness" conditions. The variables related to follow-up exams had a high percentage of unfilled records.

Table 4. Number and percentage of missing data in variables with more than 50% missing data in the pulmonary tuberculosis notification form, in adults aged 18 and over, in the Notifiable Diseases Information System. Belo Horizonte/MG, 2001-2020.

Varibles	Total*	Ignored	Not filled
	n (%)	n (%)	n (%)
Education	9581 (56.6)	7344 (76.6)	2237 (23.3)
Government beneficiary	2303 (56.6)	2231 (96.8)	72 (3.1)
Diabetes	8554 (50.6)	6434 (75.2)	2120 (24.7)
AIDS	8622 (51.0)	6810 (78.9)	1812 (21.0)
Mental disease	8918 (52.7)	6675 (74.8)	2243 (25.1)
Other	10117 (59.8)	6965 (68.8)	3152 (31.1)
Antiretroviral	16436 (97.2)	54 (0.3)	16382 (99.6)
BAAR after 6th month	16112 (95.3)	0 (0.0)	16112 (100.0)

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Table 4. Number and percentage of missing data in variables with more than 50% missing data in the pulmonary tuberculosis notification form, in adults aged 18 and over, in the Notifiable Diseases Information System. Belo Horizonte/MG, 2001-2020.

Variáveis	Total	Ignorado	Não preenchimento
	n (%)	n (%)	n (%)
Sensitivity test	15596 (92.2)	2 (0.0)	15594 (99.9)
BAAR monitoring 6th month	12263 (72.5)	0 (0.0)	12263 (100.0)
BAAR monitoring 3rd month	11302 (66.8)	0 (0.0)	11302 (100.0)
BAAR monitoring 5th month	9802 (57.9)	0 (0.0)	9802 (100.0)
BAAR follow-up 1st month	9522 (56.3)	0 (0.0)	9522 (100.0)
BAAR 2nd sample	9264 (54.8)	0 (0.0)	9264 (100.0)
BAAR monitoring 4th month	8723 (51.6)	0 (0.0)	8723 (100.0)
DOT Performed	8800 (52.0)	1313 (14.9)	7487 (85.0)

Source: Prepared by the authors based on data from SINANNET/SMSA-BH
BAAR: Acid-Alcohol Resistant Bacillus; DOT: Directly Observed Treatment
* Missing total between 2001-2020

DISCUSSION

The completeness of the fields in the notification form and the monthly monitoring report for pulmonary tuberculosis in adults was predominantly classified as unsatisfactory in the city of Belo Horizonte, between 2001 and 2020. It should be noted that, regarding sociodemographic data, only the mandatory fields of the items, gender and age, were considered to have an excellent level of completeness. Crucial information contained in the notification form, such as race, education, status as a beneficiary of income transfer programs and membership of groups considered special, in addition to data on comorbidities, monitoring and directly observed treatment, were assessed as having regular or unsatisfactory completeness. When analyzing the periods, an increase in the completeness of the race field was noted over the years. From 2001 to 2005, completeness was categorized as unsatisfactory (68.3%) and, from 2015 to 2020, it evolved to regular (88.8%). The education variable remained unsatisfactory in all periods evaluated. The lack of information on sociodemographic data may prevent a reliable characterization of the profile most affected by tuberculosis.

Pulmonary tuberculosis is a disease whose occurrence is intrinsically related to social factors, which is why it primarily affects vulnerable populations, mostly composed of black individuals, those with low levels of education, low income and those receiving government funding[16]. Although treatment is available through the Sistema Único de Saúde [Unified Health System], the disease can result in absence from work or reduced labor productivity, causing economic impacts for the patient and their family, resulting from expenses with transportation and food, which can contribute to treatment abandonment[17].

There are significant social implications and worsening of the socioeconomic condition of patients, especially those in vulnerable situations[18]. The low completion rate of fields related to sociodemographic information, such as education, income and being a beneficiary of government income, makes it difficult to identify the most socially and economically vulnerable groups and to effectively target interventions. Given the social and economic impacts of the disease, especially in vulnerable groups, research points to the need for incentives, such as food supplement baskets and transportation vouchers, in order to promote adherence to treatment[6,19].

In the study, the fields related to clinical information on cases, which are essential for planning treatment strategies, showed unsatisfactory completeness in the initial periods, but reached a regular level of completion from 2015 to 2020. Only the variables type of entry and closing status reached an excellent level of completion. Comorbidities associated with tuberculosis impact on the way in which patients should be followed-up by healthcare professionals, and it is essential to consider, in a special

way, individuals affected simultaneously by TB and AIDS and DM[20,21].

With the emergence of the AIDS epidemic in 1980, the number of tuberculosis cases increased by 12% in Brazil, and it was observed that cases of TB/HIV co-infection had a higher risk of treatment failure, multidrug resistance and three times higher risk of death compared to patients without co-infection[20]. Individuals with DM/TB co-infection are three times more likely to develop active TB, due to the suppression of the immune response caused by diabetes[21]. Therefore, it is suggested that cases of TB/HIV and DM/TB co-infection be monitored more closely and carefully, with adequate recording of comorbidity and professional training being essential to promote effective care and surveillance of these patients.

Tuberculosis requires at least six months of treatment with a multidrug regimen[22]. Therefore, it is imperative that following-up and periodic examinations are correctly recorded in the monitoring forms, something that was not observed in the present study. The only fields that presented an excellent degree of completion were those related to the recording of diagnostic tests, including first sample bacilloscopy, sputum culture, radiography and histopathology. The RMT-TB diagnostic test, implemented in Belo Horizonte in May 2015, had a completeness rate considered poor in the period from 2015 to 2020 (29.93%).

Multidrug-resistant tuberculosis (MDR-TB), which is characterized by simultaneous resistance to the antibiotics such as rifampin and isoniazid, is one of the most worrying forms of the disease. To aid in its control, the rapid molecular test (RMT) was implemented, aiming to optimize diagnosis and reduce the time to obtain results, in addition to identifying resistance to rifampin[19]. This method is indicated both for screening new cases of pulmonary TB in adults and adolescents and for retreatment cases, in order to verify drug resistance[23]. The use of this method and the adequate recording of the test result in the notification form can bring benefits, especially for vulnerable populations, since a faster diagnosis allows for early treatment and, consequently, the interruption of the chain of transmission of the disease.

The fields on the form relating to follow-up examinations were unsatisfactory. This result is in line with a study carried out in urban centers with the highest TB burden in Brazil, including the city of Belo Horizonte, from 2001 to 2006, which indicated errors in filling out the forms and lack of follow-up of cases[24]. The Ministry of Health recommends that monthly sputum smear tests be performed, especially in the second, fourth and sixth months[13]. It is important to note that most follow-up tests are sputum smear tests and that the reduction in sputum production resulting from successful treatment may make it difficult to perform the test. Therefore, the most appropriate option would be to mark the 'not applicable' option in the fields relating to this information.

It is worth highlighting the low completeness of the field related to DOT, which constitutes an important strategy for monitoring the treatment of patients with TB. The link established between the user and the health system through DOT is crucial, especially for vulnerable populations, who have a higher risk of treatment interruption[25]. Primary Health Care is considered the entry point for the treatment and follow-up of patients with TB[22]. It is recommended that DOT be carried out by an integrated multidisciplinary team and that this data be filled in appropriately for analysis and evaluation of the execution and effectiveness of DOT, which are currently recorded unsatisfactorily.

This study was limited by using secondary data and the impossibility of establishing causal relationships during the study period. Although the high number of missing or ignored information in the system was a reality, which could be considered a limitation, the nature and objective of the study highlight the need for attention to recording, with the purpose of strengthening tuberculosis surveillance.

CONCLUSION

The completeness of the TB case records reported in adults in Belo Horizonte was predominantly classified as unsatisfactory. The variables considered essential, but not mandatory, for completion were highlighted, as they are important for characterizing the affected population and the disease. These findings may reflect both inadequate care and a lack of knowledge about the need for surveillance of this condition. It is observed that this compromises both accurate diagnosis and adequate follow-up of therapeutic procedures. Failure in these areas may result in less effective clinical management, delaying necessary interventions and impairing the patient's prognosis.

This situation may also compromise the identification of the true magnitude of the disease and the possible repercussions of treatment. Additionally, it may interfere with the quality of care, since the lack of relevant clinical information may modify the treatment. As a result of the lack of knowledge of the reality of the disease, decision-making processes may lead to ineffective interventions. Therefore, it is urgent to identify the causes of these weaknesses and implement strategies that improve

the completeness of tuberculosis notification forms, thus favoring safer and more efficient health care.

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