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Assessment of compliance with malaria treatment monitoring and cure verification activities*

Avaliação do cumprimento das atividades de monitoramento do tratamento e de verificação de cura da malária

Evaluación del cumplimiento de las actividades de seguimiento del tratamiento de la malaria y verificación de la curación

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ABSTRACT

Objective: To assess compliance with treatment monitoring and cure verification activities by Malaria Control Program professionals. **Method:** This is an evaluation research carried out through systematic observation, with the aid of a Likert-type scale form, adopting a numerical score to assess the fulfillment of activities. Data collection was carried out in the Amazonian municipality of Cruzeiro do Sul in Acre State. Data were analyzed using descriptive statistics. **Results:** Fifteen endemic disease control agents, five nurses and five microscopists were observed in the performance of their functions in the program. Treatment monitoring and cure verification activities obtained the respective total compliance percentages of 72.0% and 12.1%. Microscopists, assessed in 9 activities, obtained a higher percentage of compliance with activities, while nurses and endemic disease control agents had a partial compliance rate or did not perform certain activities. **Conclusion:** Malaria Control Program performs below the recommended level, not meeting the established gold standard, which may mean maintaining or increasing malaria cases.

DESCRIPTORS

Malaria; Treatment Outcome; Public Health Nursing; Public Health Surveillance.

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INTRODUCTION

Malaria is endemic in the Amazon region and its historical trajectory is linked to the process of economic development and migration. The first rubber cycle, which occurred between 1879 and 1912, was marked by the intense migratory movement, especially of the northeastern population, which favored the disease to spread[1].

Between the 20s and 90s of the 20th century, several measures were adopted by the government to curb the disease to spread, especially in the Amazon region. The creation of the Brazilian National Public Health Foundation (FUNASA – *Fundação Nacional de Saúde Pública*), in 1993, culminated in the outline of several actions. After its extinction, in 2003, the Health Surveillance Department, directly linked to the Ministry of Health, defined new national guidelines for combating malaria through the Malaria Control Program (MCP)[2].

MCP's main goal is to reduce malaria incidence, its complications and mortality, interrupting its transmission chain. For this objective to be achieved, it is necessary to mobilize financial, physical, and human resources. The involvement of health professionals in disease control is important, as the commitment of the different categories of workers is essential[3].

A worldwide public health problem is addressed, the magnitude of which inserts it into the Sustainable Development Goals (SDGs), with a government agenda to end epidemics of neglected tropical diseases by 2030[4] and to present contributions to surveillance practices in health in the context of malaria providing subsidies for management action in disease control.

Assessment is a fundamental tool that qualifies decision-making by public policy makers and executors, managers, health professionals and patients, enabling the promotion of adjustments and adequacies to health programs. Thus, the present study seeks to evaluate the compliance with treatment monitoring and cure verification activities by MCP professionals.

METHOD

Type of study

This is an evaluation research, with a quantitative approach focusing on the element "process" of health service assessment. This type of study is characterized by the systematic application of procedures that allow judging intervention programs, analyzing operational processes in specific contexts[5]. The process is a dimension that covers the relationship between health professionals and their direct actions in patient care[6].

Scenario

The study was carried out in the Amazonian municipality of Cruzeiro do Sul, located in Acre state. In the Juruá and Tarauacá Envira regions, where the municipality is located, 91% of the reported cases of malaria in Acre are concentrated, and where Annual Parasite Index (API) is considered by the Ministry of Health to be high and classified as high risk (API – 50/1000). The municipal health network has 22 Family Health Units (FHU), according to the system of the National Health Facility Registry.

Population

Endemic disease control agents, nurses and microscopists who make up the MCP team were considered eligible for the study. In total, six FHU were selected.

Selection criterion

The FHUs were chosen according to the number of notifications and because they are located in "hotspots", areas where Malaria transmission is considered intense[7]. Participants included were all of the selected professional categories who were assigned to the FHU and who had worked for at least three months with MCP, an adequate period for verifying the worker's adaptation to job functions, according to the Consolidation of Labor Laws[8].

All professionals linked to MCP in the units were included. The activities performed by twenty-five (05 nurses, 05 microscopists, and 15 endemic disease control agents) were observed in five FHUs, and in a selected unit, all five professionals of the program team did not accept to participate in the study, being considered as sample loss.

Data collection

Data collection was carried out on December 2017 using the systematic observation technique[9]. Observation was initiated, in loco, during care by the team to patients who used the MCP. This strategy was used to allow greater familiarity between the research and service teams, allowing the record of the actions observed to portray the actual daily life of the program team.

A systematic observation form was prepared in the form of a checklist according to the specific assignments of each professional category included in the study and which are provided for in MCP.

The checklist was based on a Likert scale with a focus on treatment monitoring activities and their outcome, considering the attributions of each professional category, extracted from a primary care booklet for epidemiological surveillance and based on MCP "gold standard"[10]. This provides for the establishment of antimalarial therapy within 24 hours after diagnosis, guidance on therapeutic scheme and home visits, one at the beginning of treatment, one during and one at the end.

For curing verification, it is recommended to perform six Cure Slide Verification (CSV) after the end of treatment[11].

Thus, the variables (V) related to treatment monitoring and cure verification were grouped by professional category (Chart 1).

Chart 1 – Variables used according to the professional category studied - Cruzeiro do Sul, AC, Brazil, 2017

Nurses	V1: Report suspected and confirmed cases of malaria; V2: Perform nursing consultation for patients in the program; V3: Request return of patients after completion of treatment for CSV collection; V4: Guide community health agents and endemic disease control agents to monitor the cases being treated and, on special occasions, carry out supervised treatment; V5: Perform home care when necessary.
Microscopists	V1: Check the exam request; V2: Identify the biological material of patients; V3: Prepare slides (thick drop and/or thin smear) for diagnosis; V4: Perform macroscopic analysis; V5: Identify parasitemia for malaria; V6: Perform microscopic analysis and quantification of parasitemia; V7: Provide, together with the family health team and/or the team of community health agents, urgent patient referral for serious medical and hospital assistance; V8: Record medications that patients are taking in the bulletin of the malaria epidemiological surveillance information system; V9: Make an appointment for CSV follow-up, together with the family health team and/or community health agent team.
Endemic disease control agents	V1: Identify signs and symptoms of malaria and provide the start of treatment; V2: Follow patients up under treatment; V3: Guide patients on the need to complete treatment; V4: Carry out immediate and adequate treatment according to the treatment tables in this booklet and others that were introduced by the Ministry of Health's malaria treatment manual; V5: Collect CSV after completion of treatment and forward for reading according to the local strategy; V6: Receive the CSV results, and if it is positive, repeat treatment.

Data analysis and treatment

To analyze the variables observed in the professionals' work process, the mean of each variable on the Likert-type scale was calculated, which varied from 1 to 3 and represented a performance indicator in relation to each study variable, 1 corresponding to not performing the activity, 2 performing partially and 3 performing completely. The scores obtained in the variables, by professional category, were grouped allowing the calculation of the mean of each variable. The data were processed with the aid of Excel®, being represented in graphic form.

Ethical aspects

This study was approved by the Ethics Committee of Hospital São Paulo of Universidade Federal de São Paulo, approved under Opinion 1.940.017/17. The Informed Consent Form was prepared and presented to the participants, with their consent being the condition for data collection according to Resolution 466/12 of the Brazilian National Health Council.

RESULTS

With regard to the activities performed by nurses, it was found that no activity was performed in a partial or total way; however, the variable referring to home care was the one that came closest to the partial execution score.

Figure 1 represents the index of professional nurses (n=5).

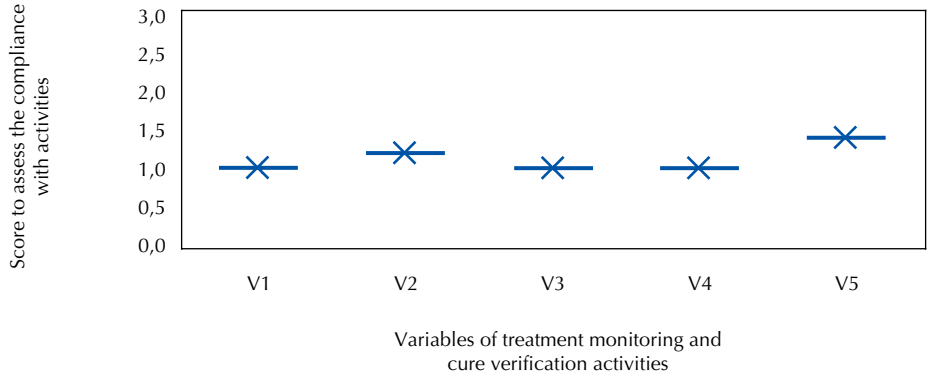

Figure 1 – Indicators (mean value) of treatment monitoring and cure verification activities for nurses – Cruzeiro do Sul, AC, Brazil, 2017

Figure 2 shows the microscopic category index, with n=5. Five variables related to the cure verification achieved full compliance. Variables V1 and V7, however, also of the same dimension, had partial fulfillment, and V8 and V9 were not performed.

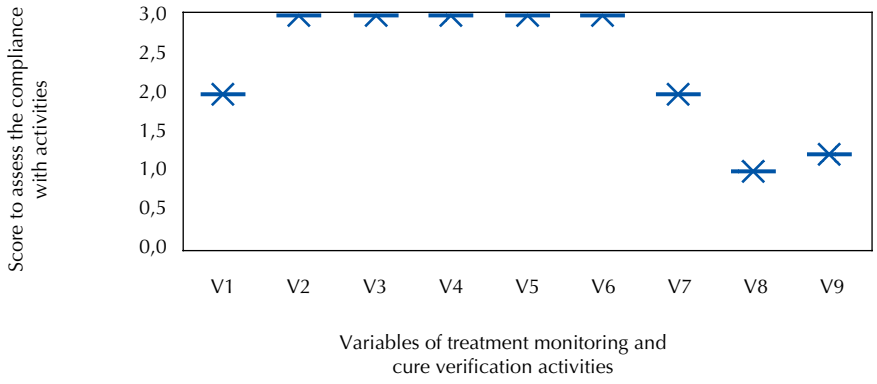

Figure 2 – Indicators (mean value) of treatment monitoring and cure verification activities for microscopists – Cruzeiro do Sul, AC, Brazil, 2017.

The category of endemic disease control agents (n=15) presented an index as shown in the graph in Figure 3. The variables that demonstrated the best performance were V3, V4, and V6, with means close to full compliance. The first two are related to treatment monitoring and V6 for cure verification, as shown in figure 3.

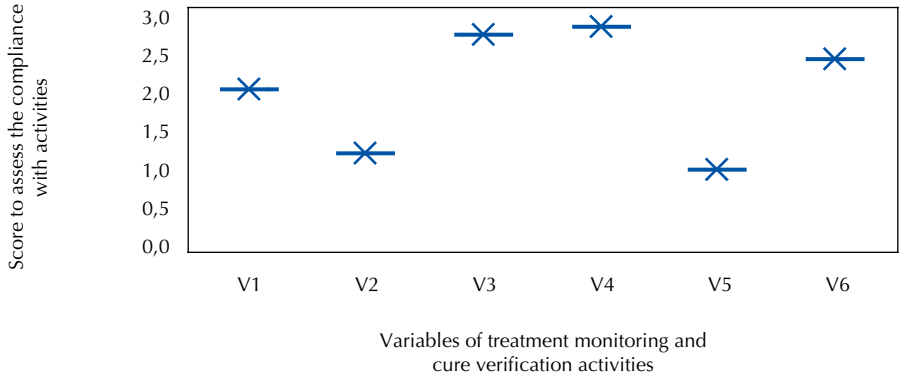

Figure 3 – Indicators (mean value) of treatment monitoring and cure verification activities for endemic disease control agents – Cruzeiro do Sul, AC, Brazil, 2017.

The variables related to treatment monitoring obtained a percentage of compliance with the activities of 72%, and those related to cure verification obtained a percentage of compliance of 12.1%. It was noted that there is a significant difference between the two, with cure verification being the activity with the lowest rate of compliance.

DISCUSSION

In assessing the rate of compliance with the activities of the three professional categories included in the study, a significant difference was found in their performance in relation to each one of them.

The nurses' performance was assessed in five activities related to monitoring the treatment and verifying the cure for malaria, which were not partially or totally fulfilled, despite the relevance of this professional in the "process of epidemiological surveillance - information - decision - action during care for individuals, families and communities"[12]. It is emphasized that nursing work must be linked to other professional practices, for the production of health services that meet communities' needs as a whole[12].

During the observation period, it was identified that there is no supervision of the work of endemic disease control agents by nurses, even though there is a prediction of this activity in the primary care booklet for health surveillance[10]. It is important to highlight the role of the nurse's leadership with the health team, as it qualifies the services and provides

better team performance, in addition to enabling fulfilling patients' needs and meeting institutional goals.

The daily practice of nursing care in a setting of multiple activities, which make up the PHC (Primary Health Care) portfolio in Brazil, is challenging. A study carried out in the Brazilian state of Minas Gerais revealed that the overload of nurses in the family health strategy "has an impact on the quality of care provided, causing feelings of frustration and doubt regarding their performance"[13].

Another relevant aspect that can influence professional performance is the operational context of MCP. In the municipality studied, there are challenges for implementing the program's actions similar to those found in South Africa in a study carried out in 2014, in which lack of financial resources, staff and political support was identified, making the goals and control plans regarding malaria without operational conditions[14].

Concerning microscopists' work, it is known that the coordination of health surveillance laboratories is responsible for the quality control of the production of these professionals, who must work in basic laboratories, in health units, directly in microscopic analysis[15]. It is added that the performance of microscopists is influenced by load and working conditions (physical structure), demand for services, availability and quality of inputs, in addition to the nature of interpersonal relationships at work[16].

When analyzing the set of variables, it is observed that this is the category studied with the greatest number of activities. It can be considered that the fulfillment of actions related to treatment monitoring and cure verification has a good performance, with emphasis on cure verification. However, it is important to highlight that this professional has a predominantly technical procedural work process, as it is restricted to the use of the microscope, which gives it a different nature in relation to the other categories studied[17].

The variables related to microscopists' work, in which there is a need for involvement with the team, showed an index of partial realization and non-realization, which reiterates that the focus of their activity is more restricted to microscopy. Studies on the assessment of the activities of this professional carried out in Ethiopia and Indonesia have shown that the aspect of accuracy in reading slides has been more emphasized in relation to other aspects of the work process[17-18].

In the six activities assessed to measure the compliance rate of endemic disease control agents, there was no record of the total achievement index. Professional agents are relevant in the MCP, and must work in an integrated manner with the health team, developing "disease surveillance, prevention and control activities and health promotion in accordance with SUS [*Sistema Único de Saúde* – Brazilian Unified Health System] guidelines and under supervision[19].

However, the agents' work process can lead to occupational exhaustion. A research on the insertion of agents in a malaria treatment institution, carried out in three sub-Saharan African countries, concluded that well-trained agents' work can present good performance; however, work management is necessary for adopting strategies that can guarantee performance conditions for these professionals[20].

Agents are workers in the program who have more opportunities to contact patients. It is up to agents to identify patients to perform an exam, slide collection, disease reporting, institution, treatment monitoring and cure verification. In addition to these occasions, in the field work of vector control actions, agents have access to patients' homes, appropriating the local reality, the context of life of other information that interfere with the population's health condition[21]. It is a context of many and complex activities, which must be taken into account by the assessment process.

MCP workers' performance in Cruzeiro do Sul shows the change in care provision from the hospital to the community, and the new emphasis on multidisciplinary and cross-sector approaches means a change of roles for professionals. These changes represent challenges for health work management, which must seek an active dialogue with health workers, promote qualified listening to their claims, change the logic of organization of services and establish a new way of working[14].

For workers, the challenge is to look at the changes in the health work process, seeing opportunities for learning and professional and personal development amid their concerns related to their personal situation, their position in the world of work and their income[19].

Professionals were not approached about the performance result in the observed variables. As this is a quantitative study, the explanations and set of meanings, for workers, of the obtained scores are not presented, which represents a limitation of the study and indicates the need for studies with a qualitative approach to complement it.

CONCLUSION

The performance of Cruzeiro do Sul MCP professionals, in terms of treatment monitoring and cure verification activities, was below the recommended level, not meeting the gold standard established by MCP.

In the professional category of nurses, no activity was fully performed; however, home care should be highlighted, in which the compliance rate is the best. Microscopists and endemic disease control agents performed better. In this last category, monitoring the treatment of patients was more effective. The need to improve the performance of professionals in relation to the program's activities is recognized in order to contribute to the control of the disease at the local level.

Considering this context of a high number of malaria cases, it is necessary to make an effective commitment, comprising different management spheres, to support health teams, whether from a material point of view or service organization.

In this sense, the result of this study can assist the teams in guiding activities to achieve the stipulated goals. Another relevant aspect is to reassess nursing sizing in primary care in endemic places, aiming at the quality of the program, thus enabling the improvement of the actions' indicators of these professionals and the other team members.

RESUMO

Objetivo: Avaliar o cumprimento das atividades de monitoramento do tratamento e verificação de cura pelos profissionais do Programa de Controle da Malária. **Método:** Trata-se de pesquisa avaliativa, realizada por meio de observação sistemática, com auxílio de formulário com escala Likert, adotando escore numérico para avaliar o cumprimento das atividades. A coleta dos dados foi realizada no município amazônico de Cruzeiro do Sul no estado do Acre. Os dados foram analisados por meio de estatística descritiva. **Resultados:** Foram observados 15 agentes de controle de endemias, 5 enfermeiros e 5 microscopistas, no desempenho de suas funções no programa. As atividades de monitoramento do tratamento e verificação de cura obtiveram os respectivos percentuais totais de cumprimento: 72,0% e 12,1%. Os microscopistas, avaliados em 9 atividades, obtiveram maior percentual de cumprimento de atividades, enquanto que enfermeiros e agentes de controle de endemias tiveram índice de cumprimento parcial ou não realizam determinadas atividades. **Conclusão:** O Programa de Controle da Malária apresenta desempenho abaixo do preconizado, não atendendo ao padrão ouro estabelecido, podendo significar a manutenção ou a elevação dos casos de malária.

DESCRITORES

Malária; Resultado do Tratamento; Enfermagem em Saúde Pública; Vigilância em Saúde Pública.

RESUMEN

Objetivo: Evaluar el cumplimiento de las actividades de seguimiento del tratamiento y verificación de curación por parte de los profesionales del Programa de Control de la Malaria. **Método:** Se trata de una investigación evaluativa, realizada a través de la observación sistemática, con la ayuda de una forma de escala Likert, adoptando una puntuación numérica para evaluar el cumplimiento de las actividades. La recolección de datos se realizó en el municipio amazónico de Cruzeiro do Sul en el estado de Acre. Los datos se analizaron mediante estadística descriptiva. **Resultados:** Se observaron 15 agentes de control endémico, 5 enfermeros y 5 microscopistas en el desempeño de sus funciones en el programa. Las actividades de seguimiento del tratamiento y verificación de curación obtuvieron los respectivos porcentajes totales de cumplimiento: 72,0% y 12,1%. Los microscopistas, evaluados en 9 actividades, obtuvieron un mayor porcentaje de cumplimiento de las actividades, mientras que las enfermeras y agentes de control endémico tuvieron una tasa de cumplimiento parcial o no realizaron determinadas actividades. **Conclusión:** El Programa de Control de la Malaria se desempeña por debajo del nivel recomendado, sin cumplir con el estándar de oro establecido, lo que puede significar mantener o aumentar los casos de malária.

DESCRIPTORES

Malaria; Resultado del Tratamiento; Enfermería en Salud Pública; Vigilancia en Salud Pública.

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