# Visit of the Endemics Combat Agent in the face of the Covid-19 pandemic: challenges and perspectives

# Visita do Agente de Combate às Endemias frente pandemia por Covid-19: desafios e perspectivas

# Visita del Agente para Combatir Endémicas ante la pandemia de Covid-19: desafíos y perspectivas

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## RESUMO

**Objetivo:** Refletir acerca dos desafios e perspectivas relacionados à visita do Agente de Combate às Endemias frente a pandemia por Covid-19. **Método:** Revisão narrativa desenvolvida a partir de estudos em artigos publicados em periódicos nacionais à luz de vários autores, como também de documentos elaborados por órgãos oficiais. **Resultados:** Reflexão acerca dos desafios enfrentados pelos Agentes de Combate às Endemias (ACE) durante as visitas nas casas dos munícipes e as perspectivas de como executar um trabalho que impacte na diminuição das arboviroses durante vigência da pandemia. Normas técnicas sugerem trabalho diferenciado por parte dessa categoria, alterando o contexto da visita no intradomicílio, permitindo as ações pontuais de eliminação mecânica de criadouros ou tratamento dos depósitos mais restrito ao peridomicílio. Cenário impacta substancialmente na identificação e tratamento dos depósitos no imóvel, que poderá restar focos nas residências. Além disso, a comunidade tem demonstrado receio de receber o ACE com medo da contaminação pelo vírus, como também os profissionais pela exposição ao adentrar no peridomicílio para investigar criadouros e orientar comunidade. **Conclusão:** Urge que sejam pensadas outras estratégias de controle do Aedes que impactem positivamente junto às demais ações que já vem sendo realizadas na região.

**Descritores:** Agente de Combate às Endemias, Aedes aegypti, Covid-19.

## ABSTRACT

**Objective:** To reflect on the challenges and perspectives related to the visit of the Combat Agent to Endemics in the face of the pandemic by Covid-19. **Method:** Narrative review developed from studies in articles published in national journals in the light of several authors, as well as documents prepared by official agencies. **Results:** Reflection on the challenges faced by the Endemic Combat Agent(ECA) during visits to the homes of the citizens and the perspectives on how to carry out work that impacts on the reduction of arboviruses during the duration of the pandemic. Technical norms suggest differentiated work by this category, changing the context of the visit inside the home, allowing specific actions for the mechanical elimination of breeding sites or treatment of deposits more restricted to the home. Scenario substantially impacts the identification and treatment of deposits in the property, which may remain outbreaks in homes. In addition, the community has shown a fear of receiving ECA for fear of contamination by the virus, as well as professionals due to exposure when entering the home to investigate breeding sites and guide the community. **Conclusion:** It is urgent that other Aedes control strategies be considered that have a positive impact with the other actions that are already being carried out in the region.

**Descriptors:** Endemic Combat Agent, Aedes aegypti, Covid-19.

## RESUMEN

**Objetivo:** reflexionar sobre los desafíos y las perspectivas relacionadas con la visita del Agente de combate a las endémicas frente a la pandemia de Covid-19. **Método:** revisión narrativa desarrollada en base a estudios en artículos publicados en revistas nacionales a la luz de varios autores, así como documentos preparados por organismos oficiales**. Resultados:** Reflexión sobre los desafíos que enfrentan los Agente para Combatir Endémicas durante las visitas a los hogares de los ciudadanos y las perspectivas sobre cómo llevar a cabo el trabajo que impacta en la reducción de los arbovirus durante la pandemia. Las normas técnicas sugieren un trabajo diferenciado por esta categoría, cambiando el contexto de la visita dentro del hogar, permitiendo acciones específicas para la eliminación mecánica de los sitios de reproducción o el tratamiento de depósitos más restringidos al hogar. El escenario impacta sustancialmente la identificación y el tratamiento de los depósitos en la propiedad, que pueden seguir siendo brotes en los hogares. Además, la comunidad ha mostrado temor a recibir ACE por temor a la contaminación por el virus, así como a los profesionales debido a la exposición al ingresar al hogar para investigar los sitios de reproducción y guiar a la comunidad**. Conclusión:** es urgente que se consideren otras estrategias de control de Aedes que tengan un impacto positivo con las otras acciones que ya se están llevando a cabo en la región.

**Descriptores:** Agente para Combatir Endémicas, Aedes aegypti, Covid-19.

REVIEW

## Introduction

The term endemic has been used for many years by mankind together with the word epidemic, which together go back to historical moments in human health such as the black plague, cholera, tuberculosis and yellow fever, being currently, dengue, visceral leishmaniasis and influenza, as well as measles and other reemergents, examples of infectious diseases that have been causing public health concern.[1-2]

In this context, arboviruses, with wide distribution in the national territory, have over the years caused significant morbidity and mortality.3 Dengue and other arboviruses such as chikungunya and zika are diseases caused by viruses from different families, but which have the same vector, mosquitoes from genus Aedes, with Aedes aegypti being the most adapted to the urban environment. These diseases are today serious public health problems in Brazil and impose major social and health challenges in the territories where they are present.[2]

Prevention and control activities for arboviruses in Brazil, especially Dengue, have been based on the National Dengue Control Program (PNCD), developed by the Ministry of Health in 2002, which incorporated the principles of integration of dengue control actions in primary care and, thus, has two important actors for this construction, the Endemics Combat Agent (ECA) and the community health agent (CHA). This integration is documented in the National Guidelines for the Prevention and Control of Dengue Epidemics, with emphasis on the joint actions of ECA and CHA.[4-5]

The ECAs are indispensable in the control of arboviruses together with the support of the community, strengthening the educational actions of the PNCD, with attributions based on the activities of surveillance, prevention and control of endemic and infectious diseases and health promotion, from the realization of surveillance actions for endemic diseases and their vectors, in addition to chemical control (chemical substances such as larvicide and / or insecticide), when necessary.

The ECA are responsible for promoting the mechanical and chemical control of the vector, whose actions are based on the detection, destruction or proper destination of natural reservoirs or artificial water that can serve as a deposit for Aedes eggs. The ECA usually performs three types of control mechanisms: mechanical, biological and chemical. In addition, the promotion of educational actions during home visits is recommended, in order to guarantee the permanence of the elimination of breeding sites by the owners of the properties, seeking to break the chain of disease transmission.[6]

As of February 26, 2020, with the first notification of a confirmed case of COVID-19 in the State of São Paulo by the Ministry of Health (MS)[7], several activities involving direct contact between ECA and other professionals with the community began to be implemented, with emphasis on social distance, the use of masks and the respiratory label as essential measures to reduce the proliferation of the virus throughout the national territory. The agent's performance is limited to the visit to the peridomicilio with the resident, observing the precautionary measures.

Observing the spread of COVID-19 throughout the world, particularly in Brazilian territory, a time when other diseases have been presenting a high number of notifications and confirmations, such as Dengue and Chikungunya, it is important and necessary to reflect on the control actions of these arboviruses , taking as its starting point the work of agents to combat endemic diseases in the current scenario imposed by the pandemic. Thus, the objective of this work was to report on the challenges and perspectives of the ECA's performance during the technical visit to the resident in a pandemic time by Covid-19.

## Method

This is a narrative review developed from the search for articles published in journals and documents from official agencies. This method allows to intensify the knowledge already presented in the literature plus the reflections proposed by the authors. This methodology contributes to the discussion on a theme, being indicated for themes that need further study, as well as the context of the COVID-19 pandemic.

## Results and Discussion

### Dynamics of home visits by agents to combat endemic diseases

ECA perform fundamental activities for the maintenance of health in the population with regard to the control of arboviruses with vector surveillance actions, developing activities in accordance with SUS guidelines, as previously described in Law 11.350 / 06 in its article 4:

> Art. 4 The Agent for Combating Endemic Diseases is responsible for the activities of surveillance, prevention and control of diseases and health promotion, developed in accordance with SUS guidelines and under the supervision of the manager of each federated entity.[8]

This is the professional who directly contact the citizens during field operations to control the Aedes aegypti vector. Each ECA is responsible for a fixed area of 800 to 1000 properties, visited in bimonthly cycles and aims to discover outbreaks, destroy and prevent breeding sites, prevent the reproduction of outbreaks and guide the community through educational actions on the disease and its forms of prevention.[5,9]

As provided for in Law No. 13,595, of January 5, 2018, the following duties are defined for the Agent to Combat Endemic Diseases: development of educational and community mobilization actions; actions for the prevention and control of diseases and health problems in interaction with the Community Health Agent (CHA) and the Primary Care(PC) team ; identification of suspected cases of diseases and health problems and referrals to the health unit; guidance to the community on information on the clinical and environmental management of arboviruses; field actions that include entomological, malacological research and collection of disease reservoirs.[10]

In addition, ECA are still responsible for registering and updating the real estate base for planning; chemical and biological control actions, environmental management and other integrated vector management actions; participation in projects aimed at evaluating new intervention methodologies for disease prevention and control; among others.

Upon arriving at the property for the home visit, the endemic agent, after the resident's permission to enter it, will start the inspection starting from the outside (patio, yard or garden), always going on the right. The inspection of the property will continue through the internal visit, starting with the back part, moving from one room to another until the one located ahead. In each of them, the inspection must be made from the right.[11] In this way, it starts at the peridomicilium until it enters the intradomicilium in search of Aedes aegypti focus.

At the end of the inspection, the ECA must complete the visit form with a record of the date, time of completion, the activity performed and its identification. During visits, it is important that the server is guided by the resident of the property (legal guardian) to accompany him, especially to the dorms. It is recommended that in these environments, as well as in bathrooms, the same knock on the door to make sure you can enter.[11]

The deposits identified by the server as standing water and without proper protection and sealing, deserve greater attention and should be carefully examined, as they can serve as breeding grounds or mosquitoes. Attention should also be focused on empty deposits that may at some point contain water (for example, from rain), and should be kept dry, covered or protected and, if unserviceable, eliminated by agents and residents, avoiding the breeding of Aedes mosquitoes. While the visit takes place in the company of the resident, ECA should be transmitting pertinent information about the work being carried out by him and the necessary care with housing to avoid the appearance of breeding sites.[5]

The strategic points, places where there is a high concentration of deposits with essential and preferential characteristics for the spawning of Aedes aegypti, must be identified, registered and constantly updated, being inspected every two weeks. Strategic points are considered: mechanic workshops, tire repair shops, scrap yards, building materials depots, cemeteries, transport garages, among others. On average, they represent 0.4% of existing properties in the locality, or one strategic point for every 250 properties. For this reason, they deserve attention in a short time between visits.[12]

**Pandemic by COVID-19: challenges and strategies in visits by ECA**

COVID-19, caused by the new coronavirus named SARS-CoV-2, announced on December 31, 2019 in a Chinese province, has established a feeling of instability and widespread fear in the world. The epidemiological situation was considered a pandemic, after the declaration of Public Health Emergency of International Importance by the World Health Organization (WHO), in January 2020.[13]

Transmission occurs from SARS-CoV-2 contagion, from individual to individual through coughing, sneezing and interaction with other people or even when heavy droplets are eliminated by someone infected and fall under surfaces.[14-15]

The support of this pandemic has as determinant and conditioning factors several economic, cultural, ecological, psychosocial and biological situations, being closely related to the characteristics of the etiological agent that spreads quickly among people due to its form of transmission. Diseases transmitted by direct contact are favored by precarious housing and sanitation conditions, in addition to situations that favor agglomeration.[2]

This is an aggravation that has become a relevant public health problem worldwide, with the suffering of families affected by this disease. The health teams, in addition to adopting therapeutic measures, are also responsible for health promotion and disease prevention actions, with the effective participation of the community.

The different vector control strategies for arboviruses that had been carried out by the ECA were impacted by the arrival of the new coronavirus in Brazil. Home visits that obeyed a methodology proposed by the Ministry of Health with the entry of civil servants in the properties, both inside and outside the home to inspect homes, warehouses, water tanks, gutters, vacant lots and commercial establishments to search for endemic outbreaks, had to be rethought in order to preserve social distance and prevent the professional from becoming infected during work activity, through contact with people who may be with COVID-19. This recommendation is important because the ECA, although asymptomatic, can represent a possible carrier of this disease and transmit it to the families at the moment when it enters for the inspection of the property.

Informative Note nº 8/2020-CGARB / DEIDT / SVS / MS brings the Recommendations to Endemic Combat Agents (ECA) for adapting zoonosis surveillance and control actions to the current epidemiological situation regarding the Coronavirus (COVID-19), aiming to reduce the risk of transmission of this disease in the population. This standard recommends attention to the measures to be observed for the activities carried out by the ECA, including home visits, during the period of the pandemic's effectiveness.[7]

According to the Informative Norm, in order to carry out a home visit, the agent must consider: not carrying out activities within the home (the visit of the professional will be limited only to the peri-home area (front, sides and bottom of the yard or land); blocking transmission in areas with intense circulation of viruses (dengue, chikungunya and / or Zika); stimulating the population's self-care about the mechanical removal actions of Aedes aegypti mosquito breeding sites and other disease prevention and control measures (the recommendation this orientation must be carried out at least 2 (two) meters away or by intercom).[7]

In addition, the note also clarifies that in all situations where there is a need for treatment of the breeding site, the agent must use latex gloves, when leaving the site, the disposal of the gloves in an appropriate place and hand hygiene is advised with soap and water for at least 20 seconds. If soap and water are not available, agents should use a 70% alcohol-based hand sanitizer, do not reuse gloves under any circumstances; additionally, a minimum distance

of two meters is required between the agents and the people present at the time of the visit.

ECAs work in direct contact with the population, being considered as one of the most worrying factors for maintaining the service of these health professionals in the community. The daily involvement of these with the population in the control of the mosquito that transmits arboviruses, leads us to a concern about the working conditions that they are submitted to.[16]

This scenario substantially impacts the process of identifying and treating all deposits in the property, and at the end of the visit there may still be outbreaks in the homes. The number of properties that refuse to enter the ECA, even in the home environment, tends to rise with contact restrictions. People feel insecure at the moment to allow a server to enter their spaces that, throughout the day, travels through several buildings and ends up in contact with several other people, even with the use of PPE as the mask and in some cases, the face shield. Thus, properties with a large number of refusals tend to be added to those closed and together impact on vector control in the municipality.

In addition to all these problems, it is necessary to remember that agents to combat endemic diseases are exposed to the risks of work that takes place on the street, especially the effects of urban violence on their health, being the same subject to various weather conditions, living daily with urban violence (which in some states increased significantly during the pandemic) and its various outlines, such as verbal attacks during visits.[17] These workers go through fear, vulnerability and unpredictability, particularities of the work that is carried out in the public space of the street.[18]

It is necessary that community understands its own role in the control of these diseases and to value the visits made by ECA, even for the time being at home, helping to value the services provided by them to the population itself, contributing to their self-esteem and motivation, maintaining the sense of work.[17]

**Perspectives for vector control**

In this scenario of uncertainties regarding the duration of the pandemic and observing the increase of new cases of arboviruses in Brazil, it is necessary that the control actions are carried out in an articulated manner with other public sectors, counting on the intensification of educational messages of impact regarding the maintenance of areas free from outbreaks of Aedes.

Urban cleaning is also important for the success of the coping actions against the vector, since their habits affect the search for reservoirs that can be easily found in places with garbage and unserviceable items such as tires and pets. Partnerships with other municipal departments and non-governmental institutions such as neighborhood associations, churches, NGOs are also strategic for community involvement.[2] In this way, it gains autonomy to effectively participate in control actions without basically transferring this role to ECA, which at the moment cannot complete the visit.

In addition, the perspective for maintaining Aedes vector control runs through the joint work process, the CHA and ECA must be co-responsible for the control of arboviruses, therefore, in this pandemic moment, it is more

urgent than ever to integrate the processes of work in order to complement each other, potentiating and improving the effectiveness of the actions, since it is up to both health education, community mobilization, identification of breeding sites, among other attributions.[2]

## Final Considerations

The reality in pandemic situations makes work processes flexible and dynamic, requiring constant reevaluation and planning in accordance with current protocols and technical notes. Thus, the visits made by the ECA have been a challenge since the beginning of the pandemic for the new coronavirus in Brazil and the installation of measures of social distance. Home visits were restricted to home and community collaboration to keep their homes free of focused deposits.

This is a viable mechanism for reducing mosquito infestation and decreasing the incidence of arboviruses transmitted by them, maintaining in parallel a strategic and continuous planning, with constant analysis of the area and monitoring of actions in the localities, valuing coordinated action different sectors of society. Promoting change in behavior, habits and lifestyle is not an easy task and the involvement of various segments is essential for the effectiveness of prevention and control of arboviruses.

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