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O papel dos gestores e dos agentes de vigilância ambiental no controle da dengue: uma avaliação de objetivos preconizados pelo Ministério da Saúde.

The role of management and environmental monitoring agents in dengue control: A recommended goals assessment by the Ministry of Health.

El papel de los agentes de gestión y monitoreo ambiental en el control del dengue: Una evaluación de las metas recomendadas por el Ministerio de Salud.

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ABSTRACT: The document "National Guidelines for Prevention and Control of Dengue Epidemics" (DNPCED), published in 2009 by the Ministry of Health, is the document in place that deals with the control of dengue in Brazil. The DNPCED provides for the duties of the Environmental Monitoring Agent (AVA) and their managers. From questionnaires given to the servers, it was observed that some basic and fundamental aspects to reduce the population of mosquitoes in a simple way and without chemical environmental liabilities are realized, such as the removal of breeding sites and visits to households. However, we can see that what is called for in DNPCED is far from being done, for example, with regard to the larval surveys, sectoral and intersectoral communication.
Key words: dengue, *Aedes*, insecticides, public policy.

RESUMO: O documento "Diretrizes Nacionais para a Prevenção e Controle de Epidemias de Dengue" (DNPCED), publicado em 2009, pelo Ministério da Saúde, é o documento em vigor que trata do controle da dengue no Brasil. O DNPCED dispõe sobre as atribuições do Agente de Vigilância Ambiental (AVA) e seus gestores. A partir de questionários aplicados aos servidores,

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observou-se que alguns aspectos básicos e fundamentais para diminuir a população dos mosquitos, de forma simples e sem passivos químicos ambientais são realizados, como a remoção de criadouros e visitas aos domicílios. Entretanto, percebe-se que o que está preconizado no DNPCED está distante do que está sendo feito, como por exemplo, no que diz respeito à pesquisa larvária, comunicação setorial e intersetorial.
Palavras-chave: dengue, Aedes, inseticidas, políticas públicas, gestores.

RESUMÉN: El documento "Directrices Nacionales para la Prevención y Control del Dengue epidemias" (DNPCED), publicado en 2009 por el Ministerio de Salud, es el documento en el lugar que se ocupa del control del dengue en Brasil. El DNPCED establece los deberes del Agente Ambiental Monitoreo (AVA) y sus directivos. De los cuestionarios dados a los servidores, se observó que algunos aspectos básicos y fundamentales para reducir la población de mosquitos de una manera sencilla y sin pasivos ambientales químicas se realizan, tales como la eliminación de los criaderos y las visitas a los hogares. Sin embargo, podemos ver que lo que se pide en DNPCED está lejos de ser realizado, por ejemplo, con respecto a las encuestas larvarias, comunicación sectorial e intersectorial.
Palabras clave: dengue, *Aedes*, insecticidas, gestores, políticas públicas.

INTRODUCTION

The present work aims to verify if what has been advocated in the "National Guidelines for Prevention and Control of Dengue Epidemics" (DNPCED) represents what has been done in the territory.

The document "National Guidelines for Prevention and Control of Dengue Epidemics" (DNPCED) was published in 2009, by the Ministry of Health. Is is the document in place that looks after the control of the dengue in Brazil. A job developed by eighteen people which specialties unfortunaly are not reavealed in the tabulation of the printed text. Beyond them, are quoted more than twenty-one contributors from several segments of the public department, such as federal universities, Health State secretaries, ANVISA, OPAS, CONASEMS, among others.

The DNPCED brings as an excuse that "will help states and counties in the organization os their activities of prevetion and control, on seasons of low transmission or in epidemic situations, contributing, that way, to avoid the occurence of deaths and to reduce the impact of the dengue epidemic.

The document general goal is to ävoid the occurence of deaths caused by dengue, prevent and control epidemic process". Among the specific goals, it is found: organize prevention actions and dengue control, improve the epidemiological surveillance, standardize the necessary strategical inputs, define strategies to reduce the sickness by controlling the vector, reforcing articulation

actions, among others.

The vectorial control is highlighted in the DNPCED. As methods of the vectorial control are quoted the mechanical control, biological control (that involvs the use of the *Bacillus thuringiensis* as larvicide formulation against the *Aedes aegypti*), the legal control (with publications of the Health Ministry) and the chemical control.

About the chemical control, Brazil (2009, p.58)[1] highlights that

> "is fundamental the racional and secure use of the insecticides in the activities of vectorial control, having in mind that the indiscrimate use determins environmental impacts, in addtion to the possibility of development of the vectors resistance concerning the products."[1]

It also quotes:

> "the acquisition of insecticides regarding the use of it in public health is responsability of the Health Ministry (...) as determined by the ordinance MS/GM no. 1.172 of July 15th 2004"[1].

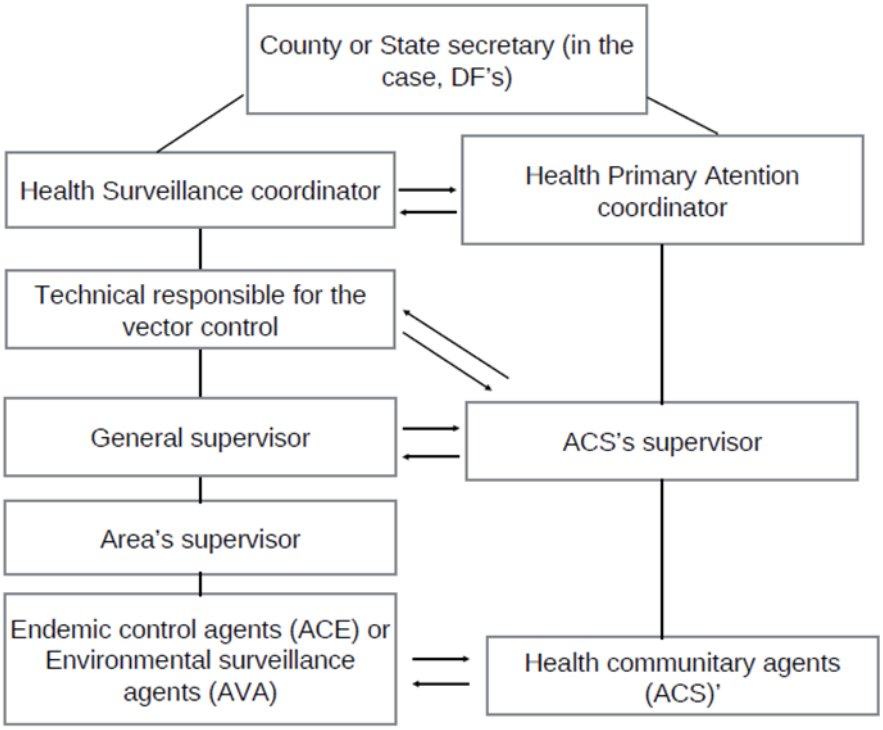
Despite the centralization proposed for the insecticide purchase, the chemical control is decentralized in its actions, whereupon o Tauil comments:

> "there is no experience in the elimination world of a disease vector done in a decentralized way, with a single direction in each government level, such as the recommended by the brazilian Unified Health System".

The persistence in one chemical control model, finds resonance in mathemical models that propose a positive cost-benefit relationship that refers to the application of the insecticides, defending that the chemical control is productive and economical.

About the hierarchical structure of jobs and servants positions, the DNPCED suggests a composition disposed in the Picture 1.

Picture 1. Hierarchical omposition suggestion for the control of the vectors in a county.



Source: (BRASIL, 2009, p.60)[1]

In the picture 1, the technical responsable of the vectorial control is the professional that manages, keeps up with and leads the actions of dengue control, as, for example, keep up and analyze indicatives entomo-epidemiological of the county. The document predicts two types of supervisors: the general and the area's. For each 10 Agent of the Endemic Control (ACE), is predicted one area supervisor, for each five area supervisors, is predicted one general supervisor.

It is up to the supervisors: recognize the dengue situation in their region; participate of the actions planning of control and their evaluations; ensure an information flow; control, distribute and predict inputs to the supervised; maintain communication with the technical management; reinforce data and communicate the teams of primary Atention- especially the Health and Family- the entomological data from the region.

Regarding the Health Comunitary Agents (ACS) it is predicted that act articulated to ACE, being up to them: send suspicious cases to the attendance units; inform to the population, directly in their homes, about the disease; inspect their house searching for larvae and potential breeding; estimulate the residents to adopt preventive actions; send to the ACE, the information of the existence of breedings hard to remove, that requires larvicides; promote reunions with the comunity having as a goal the mobilization; report to the ACE about closed properties and houses that were disclaimed the agent's action.

About the ACE assignments – the innovation in relation to the previous documents and new

assignments to the ACS[1]. O ACE is designated as Environmenal surveillance agent (AVA) in some structures, as in DF.

For the ACE, shortly, it is considered that he must, among other goals:

a) accomplish larvar research;

b) identify breedings;

c) guide the residents to eliminate breedings;

d) execute focal application and recommended larvicide´s residuals;

e) register at specific forms the executed activities;

f) inspect and treat places informed by the ACSs as well as inspect warehouses with difficult access informed by the ACS;

g) send suspected cases of dengue to the Primary Health Atention;

h) act united to residents with information about the disease and its vector;

i) promote meetings with the community intending to make them participate in acts of prevention;

j) reunite sistematically with the Primary Health Atention for information exchanges;

k) comunicate the supervisor about obstacles to accomplish their routines.

The DNPCED deliberates, therefore, several assignments to be performed by the ACE (Endemic control agent) and by the ACS (Health Comnitary Agent), as well as their managers. However, it is asked: do they recognize all the assignments determined to them? Which perspective do the servers facing the chemical control have, recommended by the DNPCED?

DEVELOPMENT

The work hypothesis is that there is disagreements between what is recommended by DNPCED and what is actually being praticed. In order to raise information about the knowledge of the last guiding document, the DNPCED, were applied questionnaries in the Health secretary of Federal District (SES/DF) scope in order to recognize in managers and environmental surveillance agents (AVA), the knowledge of the assumptions inserted in the DNPCED, harvest their impressions about the chemical control and abut the general control of the dengue. The questionnary was made of 12 questions (to the managers) and 14 questions (to the AVA) and were applied in the second semester

of 2013.

The questionnary applied to the managers (area's supervisor) contained 12 questions, which three of them were discursive and the rest of them for choosing between "yes" or "no" or "totally agree", "partially agree" and "disagree". The questionnaries applied are available in the attachment 1 and 2.

Ten managers received the questionnary and all of them returned it filled. All of them had or once had leading positions (supervising) or management in the front row of dengue control in the Federal District.

Were distributed 20 questionnaries to the environmental surveillance agents (AVA), all of them from the same region. In the DF, there are seven regions that add up to 300 AVA. 14 questionnaries were returned. The questionnary applied to the AVAs (Environmental Surveillance Agents) contained 14 questions, which one of them was discursive and the rest of them to choose between "yes" and "no" or "totally agree", "partially agree" and "disagree", or yet "daily", "weekly" or "monthly". The main goal was to detect if the present determinations in the DNPCED were being accomplished, to know their opinions about the chemical control as well to evaluate the challenges of their tasks execution and to recognize from them, which challenges were present in their work routine.

All of the interviewed signed a consentment term about the informations. After the receipt, the quetionnaries were analyzed, always grouping identical answers. The discursive questions were grouped by keywords, that were frequently repeated in the answers.

This method was submited with all its details to an ethic commitee to be analyzed, in order to all the ethic matter was considered in relation to the research subjects. The report 248/03 approved the questionnaries to me finally applied.

RESULTADOS

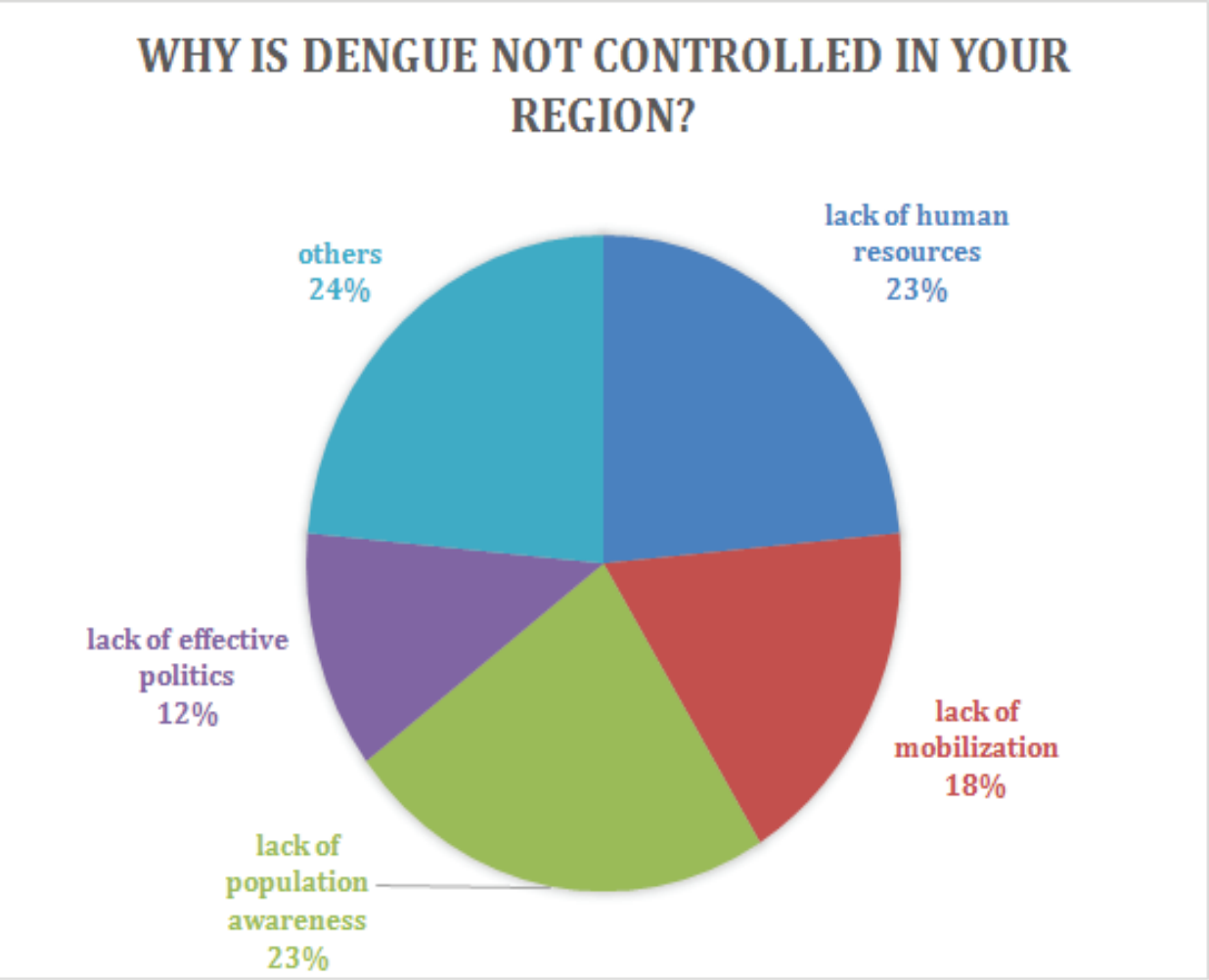
About the managers

An expressive number, among them, didn't read fully the DNPCED (40%). Those who read, only 17% totally agreed with the document, however none of them disagrees (Chart 1). The majority agreed with the chemical control (60%), besides the recognition of all the health problems and to the environment (89%). From the total, 70% know people that got sick from problems connected to the application of the insecticide. The majority would adopt a way of combating the vector without insecticides (78%) but the questioning about the actual model is low (20%). The dengue is not controlled, as stated by 70% of the managers. They are part of the ones who works with all the coverage areas in DF, brought by their respective regions of work.

The managers also answered which poison is being used in their region: diflubenzuron, malation e bendiocarb. When asked abou the challenges of the implementation of the DNPCED, the majority (70%) didn't answered. The 30% that did, pointed out: "the lack of the population awareness and its education", "the use of substances for its control" and "the awareness of the people that execute it".

The last question was, in case the dengue wasn't controlled in their region, they would have any idea why (Picture 2).

Picture 2 – Managers questionnary: "In case of a negative answer [the dengue not being controlled], do you have any opinion why is that?"



The managers presented a position with resolving and strategical power within the structure. But almost half of them didn't fully read the DNPCED. The majority disagrees of the document in its entirety, besides they agree with the chemical control and do not recognize the public politics as the major challenge for the actual dengue scenario. On the other hand, they admit it is toxic to them, to other servers and to the environment. And they testify that visually, because they know colleagues affected by the toxicity of the substances.

Chart 1. Answers to the questionnary for Managers.

Question	Answer (%)
Did you fully read the document DNPCED?	-
Yes	60
No	40
In case of an affirmative answer, do you totally agree with the document?	
Totally agree	17
Partially agree	83
Totally disagree	0
Do you agree with the vector chemical control?	
Yes	60
No	40
Do you agree that a model that uses poison is prejudicious to the environment and our health?	-
Yes	80
No	10
Didn't answer	10
Do you know any person that gor sick from the poison use?	
Yes	70
No	30
Would you adopt a model of controling dengue without the use of poison?	
Yes	70
No	20
Didn't answer	10
Is there any mobilization in your department of questioning the poison use?	
Yes	30
No	70
If dengue is not controlled in your region, what would be the motive, in your opinion?*	
Lack of population awareness	24
Lack of human resources	24
Lack of mobilization	18
Lack of effective politics	12
Others	22

* they could impress their opinions ponting out more than one matter.

About the AVA

As to the reaserched assignments, we can verify that the removel of breedings is done by 93% of the questioned people and that 71% accomplishes their regular visits to homes (Chart 2).

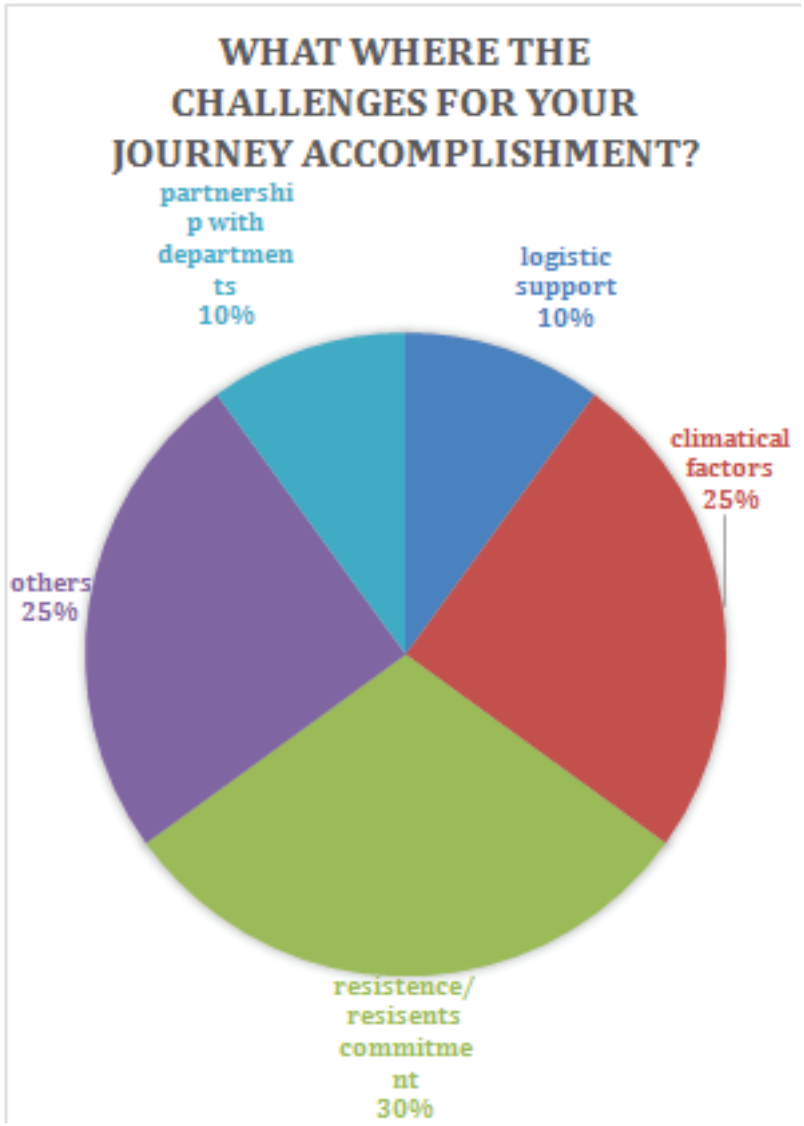
The routing of the pacient to the Health Center is recommended in the DNPCED and refers to providing the hole system, with celerity, with the possibility of an epidemic situation, besides, obviously, give the right destination to the disease treatment, calling the clinical. According to the research, more than half of the agents admit they do not do the routing of the diseased.

Only 27% of the agents admit doing the larval inquiry. The data collected show that more than 30% do the notification of the data to the supervisor only weekly and 15% hand out this information only verbaly and 8% do not report. As to the actions of the AVA together with the community and to other SUS departments, 15% of them do meetings with the community and alert about the necessity of combating the vector and the disease. There are no meeting with the ACS.

About the issue with chemical control, the answers were very similar to the managers'. In the research, 92% agree with the nocive effect of the insecticides and 64% know people that got sick because of its use.

When questioned about the challenges during their job journey, again the residents issue showed up firstly. They questioned about the population bad responsiveness and the lack of awareness of them (30%). In one of the most relevant statements, there was: "the biggest challenge is to change the behaviour of the pople, because knowing the consequences, prevention mode and not participating, make the job even harder." Also calims for atention the reference they did regarding climatic factors, as the sun and the rain, as a difficulty for the job done by them (25%).

Picture 3 – Questionnary to the AVAs: "What are the biggest challenges to accomplish your job journey?"



Continua

Chart 2. Answers to the questionnary to the AVA.

Question	Answer (%)
Do you rout dengue suspects to the Health Center ?	
Yes	43
No	57
What is the frequency of that?	
Daily	0
Weekly	0
Monthly	14
Didn't answer	86
Do you remove breedings in the houses you visit?	
Yes	93
No	7
Do you manage to accomplish the daily yield of 20 to 25 house visits?	
Yes	71
No	29
Do you apply larvicides?	
Yes	100
No	0
Do you do larval research ?	
Yes	27
No	73
Do you promote meetings with the community about dengue?	
Yes	15
No	85
Are there weekly meetings with the servers of the Primary Atention?	
Yes	7
No	93
Do you know any person that got sick by the poison use?	
Yes	64
No	36
Do you agree that a model that uses poison is prejudicious to the environment and the citizen's health?	
Yes	92
No	8
Are there weekly meetings with the ACS?	
Yes	0
No	100
How is your job reported to the supervisor ?	
Verbaly	15
Written (report)	77
Systematically	0
Other	0
It is not report	8
What is the frequency that your job is reported to the supervisor?	
Daily	64
Weekly	36
Monthly	0
What are the biggest challenges to accomplish your job journey?	
Resistence/ residents' commitment	30
Climatic factors	25
Partnership with departments	10
Logistic support	10
Others	25

DISCUSSION

The issue of the dengue control has already surpassed national matters and became a world concearn, especially with Brazil's high foreign flow[4,5]. Pessoa *et al*[5]**.** highlights that the dengue prevention is in an integrating role at the public political offer, contained especially in their documents, as the DNPCED. It also points out that the leading actors in this integration are exactly as the ACE and the ACS[5]. About the agents, we can observe that basic and fundamental aspects to reduce the population of the mosquitos, in a simple way and without environmental chemical consequences are done, as the breedings removal and home visits. However, we realize that what's being recommended in the DNPCED is far distant from what's being done, within the researched sample, as for example, regarding the larval research. We remind you that this data is basic to the constitution of the Fast Index Raising to *Aedes aegypti* (LIRAa)[1]. Without the LIRAa, or with partial and low quality information for its calculation, all the politic of efforts allocation to dengue combat, according the DNPCED, would be compromised, given that the LIRAa is the data base to the implantation of preventive actions. Besides offering subsidies to behaviour perceptions regarding the mosquito, which allow us new way for intervation[6].

As for the contact with the ACS, there is a clear difficulty: they do not gather, ensuring that the tuning with the Basic Atention, seems simply to be an unexisted event in the structure. Is it really important that there is an early detection of a dengue picture in the population and communication between the sectors to an effective action[7]. There are indicatives that this lack of integration can be the biggest decisive factor for the disease control[8].

The issues brought up by the AVA must be incorporated in the discussion concerning the politics for dengue control. There is an obvious necessity for sharing the difficulties with the managers in order to make adjustments. For example, search experiences from other government sectors that have likely functions as the Correios (mail company) and the companies that provide electricity, where their employees also walk beneath the sun and rain to accomplish their duties.

Beyond that, the DNPCED represents a chemical-dependent model, although the document highlights the importance of the cooperation between the sectors. In 2005, Abrahão[10] proposed a new format to oppose the chemical-dependent model which, in the occasion, was represented by the National Dengue Control Plan (PNCD), in 2002. In 2013, Lasneaux[11] purposes another way of control as an updated try to give importance to the social participation to the dengue control and reduce the imperative that the managers will find the only solution at their cabinet or even the scientists, at their labs. It is sustained the idea that the intersectorial contact must definitely stop being theorical and start being effectively implanted.

CONCLUSION

The research points out a certain tuning between the brazilian *modus operandi* and the servers

thought and reveals: there is a lack of integration between the segments quoted in the brazilian politics for the control of dengue.

The program of dengue control, if accomplished in its extention, maybe could offer concret advances in the reduction of the cases. This is an issue that seems urgent to be resolved: the accomplishment of what's being recommended. It is wished that the tools of intervention could be used for the sectorial integration purposed was fully attained. With the examples of other countries, it is recognized firmly this role. Inside this perspective, the supervisors, the ACE and the ACS are the fundamental actors for the result transformation.

The servers recognize that there are problems in this mode, however, they accept it, with almost no discussion. Almost, but it is noticed that it exists, at least in intention. There is some reaction and questioning about what has been done. Another positive signal is that a new model, without chemical control, would be welcome: there is reception for possible changes. For servers that coordinate the works of controling the vector and know the challenges and conditions of constant work, it is interesting and endorser for a change to be addopted, considering they know that the dengue is not controlled in their regions.

What is expected, finally, is that we can act to correct paths, confirm principles, insist in the integration and apply sistematically evaluations about the impact of the measures, all in function of the main goal of the current program: avoid deaths caused by dengue.

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ATTACHMENT 1 – Questionnary for Manager

1. Did you read fully the document “National Guidelines for Prevention and Control of Dengue Epidemics”?

□ yes □ no

2. In case of affirmative, do your agree fully with the document?

□ totally agree □ agree partially □ disagree partially

3. Which challenges do you realize in your implementation?

4. Do you agree with the chemical control of the vectors?

□ yes □ no

5. Do you agree that a combat model againt the dengue when using poison to kill the vectors is prejudicious to the environment and people’s health?

□ yes □ no

6. Do you know any person that got sick by the use of the control of vectors’ poison?

□ yes □ no

7. Would you implement a cdengue combat model without using poison to kill the vectors as an alternative to the convencional model, that uses poison?

□ yes □ no

8. Which substances are currently being used for the combat of dengues vector?

9. Do you know who defined these substances?

10. Is there any mobilization in your department regarding the questioning of the poison use?

□ yes □ no

11. Is the dengue controlled in your region?

□ yes □ no

12. In case of a negative answer, do you have any opinion of the why is that?

ATTACHMENT 2 - Questionnary for AVA (Health Survaillance Agent)

1. Do you rout dengue suspects to the Health Center?

   □ yes □ no

2. With what frequency?

   □ daily □weekly □ monthly

3. Do you remove breedings in the houses you visit?

   □ yes □ no

4. Do you accomplish the daily yield of 20 to 25 home visits?

   □ yes □ no

5. Do you do application of larvicides?

   □ yes □ no

6. Do you do larval research?

   □ yes □ no

7. How is your work reported to the supervisor?

   □ verbaly □ written (report) □ sistematically □ other

   □ it is not reported

8. In case of providing the information, what is the frequency of that?

   □ daily □weekly □ monthly

9. Do you promote meetings with the community about the dengue?

   □ yes □ no

10. Is there weekly meetings with the servers of the APSs (Health Primary Atention)?

    □ yes □ no

11. Do you know any person that has gotten sick because of the vector control poison use?

    □ yes □ no

12. Do you agree that a dengue combat model by using poison to kill the vectors is prejudicious to the environment and people's health?

    □ yes □ no

13. Are there weekly meetings with the ACSs?

    □ yes □ no

14. Which are the biggest challenges to acomplish your job journey?