**Abstract** Public health studies see intersectoriality as a strategy to promote equity in addressing the social determinants of health. The municipality of Sairé, a member of the Healthy Pernambuco Municipalities Network (RPMS), stands out for its adoption of an intersectorial policy, named A Healthier Sairé. This present study examines how this policy has promoted local equity. It was a case study using a timeline to record critical events, analysis of documents, interviews and participant observation. Actor-Network Theory (ANT) was used as a theoretical reference, and showed how adoption of the municipal policy had been central in promoting local empowerment and equity. The results, based on the timeline, demonstrate that initially it was necessary to obtain a cognitive translation, conducted through the direct influence and responsibility of the RPMS, which facilitated a second, strategic translation, with the construction of a policy anchored on the municipal program – which is currently being translated logistically into concrete actions directed towards equity. Key factors in this process for promoting local equity were: the role of strategic leadership; the value given to training; and the retention and use of structures that had previously been built.

**Key words** Health promotion, Healthy cities, Intersectorial action, Equity, Public policies

Maria do Socorro Machado Freire ¹
Ronice Maria Pereira Franco de Sá ¹
Idê Gomes Dantas Gurgel ²

¹ Núcleo de Saúde Pública e Desenvolvimento Social, Hospital das Clínicas, Universidade Federal de Pernambuco. Av. Professor Moraes Rego s/n, Cidade Universitária, 50670-901 Recife PE Brasil. socorromfreire@gmail.com
² Instituto de Pesquisas Aggeu Magalhães, Fiocruz. Recife PE Brasil.
Introduction

Intersectoriality widely discussed in the field of public health as a strategy for promotion of equity in dealing with the social determinants of health – has numerous definitions. In this study, it is understood as a process that is articulated and integrated in the formulation and implementation of public policies, resulting in integration of organizational structures, resources and processes, and in making different sectors of government, non-government entities and civil society co-responsible for promoting human development and quality of life.

In health promotion, it covers the ideas of integration, territory, equity, and social, economic, environmental, civil and political rights. It gives value to the territorial dimension, and its social networks, empowering participative processes which expand the intersectorial perspective of those policies and activation of actors in the decision-making processes.

Considered to be one of the two key axes of Brazil’s National Health Promotion Policy, and its Healthy Municipalities Strategy, intersectoriality is one of the pillars for initiatives toward healthy communities, cities and municipalities – recognized as a powerful strategy in implementing health promotion actions and making them operational. The agendas of the World Health Organization (WHO) have been giving priority to approaches and strategies that include research, formation and implementation of public policies, seeking to stimulate intersectorial interactions with a view to reducing inequalities. This context has placed the concepts of intersectoriality, and the challenges of its applicability, in debate in the field of public health.

Studies on the subject call attention to the need to build research agendas that favor theoretical inputs so that intersectorial action do not become only tentative in public management, and to enable it to become a praxis of government. In the conceptual structure of Brazil’s Unified Health System (SUS), intersectorial articulation is recommended to make it increasingly visible and clear that the health-illness process is complex and demands the convocation of other sectors for evaluation of health parameters in the formulation of their own specific policies.

The need for intersectorial coordination and cooperation to meet the challenge of demands for equity in health at the local level has been increasingly recognized and included in the activity of Pernambuco Healthy Municipalities Network (RPMS). Recognition of the RPMS as a strategy for production of equity in health in the region has been supported by the values, principles and guidelines of the National Health Promotion Policy, because its model of activity is based on equity, solidarity, happiness, ethics and respect for the diversities and subjectivities of people and their collectives.

The RPMS, through a mechanism of social mobilization and participation (known as the Bamboo Method), seeks to achieve social inclusion at its three levels of activity (community, municipality, and region) through stimulus to social participation, autonomy, empowerment, intersectoriality, sustainability and territoriality in its process of acting on the social determinants of health. The Bamboo Method has also been recognized as a powerful strategy for intersectorial action in the preparation of local health promotion plans.

This study takes as its starting point three observations: a) intersectoriality is one of the pillars necessary for development of healthy municipalities and communities; b) the municipality of Sairé, because it is part of a network of Healthy Municipalities, has intersectoriality as one of its pillars for local action; and c) local interaction between sectors, one of the guideline of the PNPS, stimulates equity, which is one of the priority principles of that policy.

This study aims to see how intersectoriality has pressed forward local equity in the municipality of Sairé. This study presents the intervention referred to as Healthier Sairé as an example of a local policy. Intervention is any policy, program or project that consists of a complex mode of action produced in a social space, that is to say, an organized system of action which comprises a process of negotiation between the actors involved in the intervention at a specific time and context.

The study uses fundamentals of Actor-Network Theory to analyze the construction of the intersectoriality in the ‘healthy municipality’ actions in Sairé. This theory studies the associations produced by the human and non-human actors (acting-or non-acting) which can be understood by the notion of ‘translation’. Translation, as well as placing the actors as articulating different and heterogeneous elements in relation...
to each other, also changes those involved in the process. The network of interactions between actors, as a procedural and constant dynamic of associations\textsuperscript{17}, is referred to in Actor-Network Theory as a Socio-Technical Network (STN)\textsuperscript{21}. All the participants are ‘actors’—entities with the capacity to act—having an ability to produce effects in the world. The acts that they produce\textsuperscript{20} are not only a property of the human beings involved, but also the fruit of association between humans and non-human factors.

Translations\textsuperscript{22} are the effect of connecting worlds (the non-profit world, the private-sector world, and the governmental world), to form a shared vision of a collaborative action. For these worlds to become connected three practices of translation are necessary, which have essential functions in intersectorial action: a) a cognitive translation—transformation of a shared vision into a collaborative action and into formulation of common objectives; b) a strategic translation—the understanding that an intersectorial action is a space of power relations, seeking to maintain and activate partners, establishing rules and redistributing the power between the members of the partnership through listening to those that suffer the inequalities; and c) a logistic translation—to create and administer the collaborative accord, with preparation of agendas, drafts for development of the shared interests in a common language.

According to the authoress quoted above, for intersectoriality to happen, these translations need to get into movement, so that the actors involved in the action can speak the same language, and for this it is necessary that the positions of power should be aligned between the actors involved in the action, through listening to those that suffer the social inequities.

Based on the above-described theoretical and strategic assumptions of methodology as developed in studies on health promotion and equity\textsuperscript{17,23,24}, the scope of the study has sought to: (i) characterize the processes of collaboration between the individual, institutional, organizational and governmental actors involved in local interventions, and their motivations and interests; and identify (ii) the devices, mechanisms and innovations that facilitate intersectoriality in Sairé, or make it more difficult; and (iii) the uncertainties and controversies that exist in practice for the actors involved in the local actions.

Local action on the social determinants of health inequalities requires coordinated actions, principally in the form of programs that bring together actors from various spheres and with varying interests and instruments for evaluation to understand issues relating to intersectorial participation, partnership and cooperation\textsuperscript{25}.

With this in mind, we present a model inspired on the work of Potvin\textsuperscript{22} (Figure 1).

\section*{Methodology}

A case study was carried out\textsuperscript{27,28} with the following sources of evidence: Participative observation, analysis of documents, semi-structured interviews, reports of significant events, and creation and analysis of a timeline. The significant events were recorded on a form named the \textit{Critical Event Card}\textsuperscript{24} which contains the following categories: Actors, interests in play, interactions, technical mediation, actions, inscription, time, inscription, time, and more.
place, consequences, and evidences. A Critical Event Card was constructed for each significant event reported.

Two of the authors participated actively in the actions of RPMS from its earliest days – thus bringing with them records and experience in routine trainings, forums and meetings of the RPMS – and in technical visits, seminars, assessment research and monitoring meetings, in the municipality of Sairé. This baggage was necessary in the construction of the scripts/roadmaps (observation and interviews) and in the search for key actors. The analysis of documents was guided by the characterization of the processes of intersectorial collaboration, based on the theoretical assumptions that underpin the systematic structure of this study. The documents analyzed dealt with the process of formation of the network and the recent local initiative, which ranged from the project that gave rise to the Network, the local plans, documents that report the events over this time, and the publications that are contained in the references of this study.

The observation and analysis of documents were enriched through semi-structured interviews with the actors who have or had a key role in relation to the local initiatives for promotion of health over the period 2004–2017, that are recorded in the timeline of the intervention (Figure 2). These were 11 participants representing the municipal management, the local authority power and local civil society, in which the majority (8) also had training in health promotion and healthy municipalities.

The analysis of these data highlighted methodological principles, values and strategies of health promotion which sustain the structuring directions of the RPMS, and orient interaction between the actors, the contexts in the processes of intersectorial collaboration.

Since this study sought to understand processes relating to intersectoriality and insertion into networks, not only at the macro level (Sairé in the RPMS), the mid-level (local public policy) and the micro level (key informants in Sairé), the concept of translation was the central focus of adoption of Actor-Network Theory\(^{29-31}\). To dissect the complexity of interventions in public health, supported on the same assumption, that Actor-Network Theory serves as an effective guide for reconciling technical and social views in these types of intervention, and used content analysis by theme subject\(^{32}\).

### Recognition of value in training, recognition of what has been constructed, and strategic leadership

The choice of Actor-Network Theory enabled the role of intersectoriality in the intervention under study in this case to be analyzed, along with the incentive to local equity arising from ex-

---

**Figure 2.** Timeline of the Healthier Sairé Intervention.

Source: Freire\(^{26}\).
pansion of this type of collaboration and vision that takes both technical staff and the population out of their 'sectorial boxes.' The theory of translation, or Actor-Network Theory, is a sociological approach that follows three methodological principles: free association; agnosticism; and generalized symmetry. Free association enables us to work with the translations, since the actors are not classified by classes or by any other hierarchical concepts: according to Latour, social groups are continually re-created in the associations that are dynamically established between the actors. Agnosticism presupposes that one should not evaluate, criticize or judge the actors when they speak and argue on any social fact. There should be no preconceptions. Generalized symmetry means we should understand that "there is not, a priori, the world of things on one side and the world of people on the other, since nature and society are both made up of heterogeneous networks".

Having said this, after employing a timeline, Critical Event Cards (based entirely on Actor-Network Theory) and observation diaries, and having analyzed the interviews that were held, three principal categories take shape in this study on intersectoriality in Sairé and its stimulus to local equity:

a) Recognition of the value of training: This was expressed in the voluntary continuation of the action of the promoters of 'healthy municipalities', who never abandoned the concepts and the commitments assumed in the training.

Remembering the course for promoters of healthy municipalities, I remember the word 'happiness'. Yes, I think that we were very happy when taking part in that course, not only for the chance to have a contact, exchange of experience with other people, but also with the possibility of learning all the theoretical knowledge that was so well worked out, so much care was taken for us really to have a new vision of a municipality, with quality of life, with a municipality working for society, a new type of public management, a participative management. (E-10).

b) Recognition of what has been built: The mechanisms for listening that were put into practice fostered and encouraged participation and empowerment of the population in the expression of rights, in the creation of healthy environments and equity in health through activities such as action and citizenship, considered to be an innovation that had an influence in the management model. The re-estabishment of the Master Plan as a directing guideline for local agendas of public policy served as an intermediary of the management devices in relation to obedience and keeping of promises, putting into practice the agreements that were made between the population and management in a previous time.

Then, as from 2013 and up to now, there was a differentiated attitude – when the team began to meet to really construct proposals, construct ideas. Ideas that would impact the whole of the municipality, all the sectors. I always say: the Healthier Sairé Program is not only a program that serves, for example, the public service, but no, we can take the Healthy Municipalities Program and use it within our own house and we will save water, consequently we will reduce the water bill we have to pay, we can reduce electricity consumption, we can take care of our own house better (E-7).

c) Strategic leadership: The mediators referred to (promoters of Healthy Municipalities) never cease to act as leaders, even on a lesser scale. However, when a leader was found with a greater power of action that recognized the accumulated efforts and persistence of these key actors and that recognized what had already been constructed, there was a conjunction of favorable factors for disputes to be transformed into innovation, and for the municipality to undergo fundamental changes.

I think that I attribute it to the new management that came in, to the office of the department Secretary, to a strategic actor, but it is a bulwark which has already wanted for some time to put this in place in Sairé. Indeed, in the previous management it was already part of everything, it was one of the participants that brought this project here, but it didn’t at that time have support, and today, clearly there are some difficulties, there are some… each person thinks differently, but today things are beginning to move forward. The seed has been planted and today we are beginning to reap some fruits of this. We are beginning to see some results from what was developed, and what has developed. (E-6).

We include the emerging sub-categories of themes as keeping of promises given, and empowerment of the population. These categories enable us to understand how intersectoriality takes place in this location, that is to say, how to translate principles into practices of health promotion – who and what is helping intersectoriality to be translated into a government praxis and a management model that aims for equity in health.

As well as these categories, which stood out, the timeline, analysis shows how the translations (Figure 1) took place over time in such a way as to result in implementation of an intervention that highlighted intersectoriality and equity.

The analysis and discussion of the data of this initial phase cover the critical events that structured the foundations of the “Healthier Sairé” (HS), and thus they are part of the context of its inception and remain in interaction as actors/forces of the RPMS, and for this reason are not included in the object of the study. Events that transformed actions in progress were considered critical events. They are inserted into the timeline in the period from 2004 through 2012, and correspond to the cognitive translation.

In this view, the events that were transformational and which faced controversy until arriving in the HS were analyzed, to get closer to the ‘facts kitchen’, that is to say, how the processes of articulation of the local intersectoriality were taking place. Thus, events were selected which as well as inclusion in the timeline were confirmed in the interview, in the observation and in the analysis of documents as being the most important in the intervention, because they served as a basis in the structuring of the changes that took place in Sairé, since they created collaborative actions and made formulation of common objectives possible.

Analyzing the timeline based on the assumptions of Actor-Network Theory, and on the signaling of the critical events prior to the HS intervention, we can record that the Social Capital Assessment Survey coordinated in 2004 by the Public Health and Social Development Group of Pernambuco Federal University (NUSP/UFPE) made it possible for the sectorialized concepts on community action and on management to be de-crystalized. As from the establishment of this turning point it was possible, concretely, to begin local intersectorial discussions and actions during the courses for Training of Healthy Municipality Promoters (2006-09) and during the development and application of the Bamboo Method (2005-).

The tool that was used for application of the Actor-Network Theory showed itself to be useful for following the actors, identifying and analyzing the interactions, motivations, interests, controversies and uncertainties of all the actors, by enabling the opening of the ‘black boxes’, making it possible to visualize the complex network of association that put the Healthier Sairé intervention into context and gave it structure.

Analyzing this first moment of the translation, it is seen that the trajectory of intersectoriality in Sairé needed to overcome older disputes, and generate new points of discussion through cognitive stimuli, application of points of view and visions, and formulation of concrete common objectives.

I would say that everything that’s happening, this revolution that’s happening in Sairé, it began way back there, I would say that the experiences, the trainings, the contents, everything that we saw back there is contributing a lot to our having got to where we are now. This revolution, this new model of management, what is happening today with the “Healthier Sairé”, has a lot to do with what we saw in the Healthy Municipalities Network (E-1).

The timeline also made it possible to note that since the start of the study the fact that the key actors were permanently present (participating in the critical events in the municipality under study) made it possible for the disputes to be transformed and socialized. The presence of these key actors as guardians of memory, promoters of change in the various subjects of controversy turned them into mediators, which made it possible for the social-technical network to make us accompany the cycle of life of an intervention in the terms as conceived by Actor-Network Theory.

2013: Healthier Sairé – The strategic translation in the direction of equity

In Sairé, studies show that the various instances of intersectorial coordination were fragile and there was little participation by the population in management and in the social control of the existing social programs in the municipality. It was concluded that “sustainability and empowerment are subjects that it is very difficult to visualize in these localities.”

The analysis of the data shows evidence that the practices offered by the RPMS in training, research, monitoring and network activity with governmental and non-governmental actors, in the various spheres of power – local, state, national and international – favored innovation in management and the empowerment of the population, resulting in the creation of devices that stimulated the process of implementation of intersectorial actions.

In relation to intersectoriality, it was perceived that it is only incipient, or is not yet happening, because it is centered on an excess of individualism and sectorial separation that still exists in the departments of local government, and when it happens the work is done based on needs and demands for one-off actions resulting from demands from other areas.
Following the timeline, one sees that in 2013 the key actors (mediators) found support and a propitious environment (actors) for intersectoriality to be established in a space of relations of power that was able to reactivate the partners, establish rules and redistribute the same power between the members of the partnership (strategic translation) through implementation of the intervention, called Healthier Sairé, which was based on the theoretical and methodological assumptions, and the guidelines, of the Healthy Municipality Plan prepared in 2006 as the conclusion of one of the courses of Healthy Municipality Promoters (NUSP/UFPE). Thus, the intervention redeemed the concepts and practices that had been put into action since 2004. With an intersectorial vision, the management and the community began to develop projects and actions that were producers of equity – such as: intergenerational programs; school visits by the mayor (interacting with students at all levels); community radio, incentivizing actions for equity; stimulus to the local sense of ownership (participative composition of a ‘municipal anthem’, and creation of a municipal coat of arms, based on studies of heraldry); a collective commitment to take care of local equipment; participative beautification of streets and squares; photography competitions in the schools, selecting locations of municipal pride; use of social media for young people; and many other activities.

2013–2017: The logistic translation

Logistic translation is necessary for the collaborative agreement to be executed through preparation of concrete agendas and actions that can transform the shared interests into a common language. Thus, as from 2013 the actions constructed by the actors involved in the local Healthy Municipality initiative began to be implemented as a government plan, included in the agenda of municipal management, such as the local Budget Law (LDO) and Multi-Year Plan (PPA), and in other government strategies such as the holding of an integrated planning seminar bringing together all the departments, representing the community and the public authority.

This instrument in municipal administration was built based on listening to the population, including the guidelines of the Healthy Master Plan and the Healthier Sairé intervention. The findings of a study that gave rise to this article indicate that this management strategy has been considered to be innovative in the sense of helping to mold the preparation of local public policies, based on the intersectoriality of actions that aim to reduce inequalities and operate on the social determinants of health.

*We saw that the people who wanted change, people who wanted to be part of an innovative management, they also wanted to have participation... The whole success of Healthier Sairé was that management could, through research, knowledge of the area, bring people into the debate, know what was best for the community. Know what would be best to prevent bringing diseases to our municipality through a badly-handled sewer, garbage, building rubble left in the street. So it would be a path toward our saying that our municipality has the conditions to be healthy (E-11).*

The findings of the survey made it possible also to visualize the importance of the key actors and their power of leadership in the changes that took place over the course of the action that was studied. These actors performed the role of mediators (Actor-Network Theory) in the integration of the municipal department to listen to the population and discuss the directions of local policies. An example was the Healthy Public Management Seminar held on February 7, 2017, the aim of which was integrated planning of the municipal departments for the current year.

The practices of training, research, assessment and academic, governmental and international partnerships favor innovation in management and empowerment of the community. The activities of the actors in a network and the devices of inter-sector management – master plan, solid wastes policy, program for a healthier city – helped in the production of collaborative processes that re-aggregated the collective forces for the construction of intersectoriality of the local actions. As a result, the study brought forward some elements for reflection on the process of construction of intersectoriality in the local healthy municipality initiative in Sairé, based on the basic assumptions of Actor-Network Theory: these are summarized in Chart 1.

Final considerations

Although there is a vast literature on analysis of the RPMS, the references presented in this study showed that there was a need to go deeper at local level, since the existing studies were mainly about the Network itself and very few about specific municipalities. This study took on the responsibility of filling agap: it adjusted the focus
and went into detail on the local actions, actors, records, uncertainties, controversies, interests at play, knowledge, interactions, mediations and the evidences of them. This was a need that had already been pointed out at the end of the study on the RPMS, as follows:

It is understood, however, that however much the study may have tried to get close to the complexity that exists in the intervention, involving a multiplicity of institutions, scenarios, community groups, cultures, end-actions, activities, interests at play, political moments, desires and wills, it was far from describing them. However much the researchers are also actors, and perhaps for this reason, the primary sensation of this intervention is that many disputes and many critical events were not understood, narrated and analyzed ... The critical events relating to the local level did not appear in the results of the study and this does not mean that they are less important for the sustainability of the action.

From this point of view, it is considered that this present study achieved the intention of getting close to the processes of interaction between the actors and activities in the course of the local Healthy Municipalities initiative in Sairé.

The process of following these actors in action made it possible, through the timeline, the critical events analysis tool, and the three modes of translation proposed by Potvin and mendeley" : "formattedCitation" : "<sup>22</sup>"}, " plainTextFormattedCitation" : "22", "previouslyFormattedCitation" : "<sup>22</sup>" }, "properties" : { "notIndex" : 0 }, "schema" : "https://github.com/citation-style-language/schema/raw/master/csl-citation.json" } (cognitive, strategic and logistic) to visualize the key actors (human and non-human) that had an important

<table>
<thead>
<tr>
<th>Actions/ events</th>
<th>Actors</th>
<th>Activities</th>
<th>Motivations and interests</th>
<th>Innovations that facilitated, or hindered, intersectoriality</th>
<th>Uncertainties and controversies in intersectorial actions in Sairé</th>
<th>Evidence of effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipality joins the PMSN – 2004</td>
<td>Public authority and civil society, UFPE/NUSP, SEPLAG, JICA</td>
<td>Healthy initiative with old people Training course for Healthy Municipality Promoters; Bamboo Method</td>
<td>Healthy public policies Exchange of experience with international partners</td>
<td>Healthy Municipalities Plan – 2006 Management model based on the idea of Healthy Municipalities and community empowerment (helped) Culture dependent on local power (hindered)</td>
<td>Management’s initial disbelief in the ideas of Healthy Municipalities ‘Immediatist’ culture, dependent on public authority and political power</td>
<td>Elderly People’s Center Healthier Sairé Program (2013–17) Healthy Public Management Seminar (2017)</td>
</tr>
<tr>
<td>Garbage Triage and Composting Unit – 2005</td>
<td>Health Education, culture and sport Farming and environment Tourism and economic development Social action and citizenship</td>
<td>Healthy Municipality Promoter Training Course (Activity as network, managers and community) Approval by municipal legislature</td>
<td>Engagement of Healthy Municipality promoters (helped) Lack of integration of the sectors in budget planning (hindered)</td>
<td></td>
<td>Local party political dispute</td>
<td>Plan approved by municipal legislature Sairérecycles 68% of solid waste collected in the city</td>
</tr>
</tbody>
</table>
role in weaving together the construction of local intersectoriality and equity. The Actor-Network Theory showed itself to be significant, and important for understanding of these processes. The record of critical events in a timeline that took into account actors and activities made clear the influence of each one of the events in the process of construction of intersectoriality in the municipalities studied.

A conclusion of the study is that intersectoriality in the municipality of Sairé began to be implemented with its participation in the Pernambuco Healthy Municipalities Network (PMNSB) through the collective construction of new concepts and practices that constituted a cognitive transaction of the interactions that take place in contemporary, systemic, open interventions that involve management, civil society and the university.

Key actors that underwent the process of cognitive translation played a fundamental role in the new translation of this process: the strategic translation. The Healthier Sairé intervention was conceived in a procedural and reflexive manner, highlighting three important factors: presence of a strategic leadership; attribution of value to training; and recognition of existing actions. The Healthier Sairé Program is a point of change for intersectoriality and local equity, and is being translated logistically into concrete actions such as: the Triage and Composting Unit, the Healthy Master Plan, revisited, and integrated inter-sector and participative planning.

We highlight the role of the key actors as catalyzing agents of the process of translation of a sectorialized management to local intersectoriality: mediators that succeeded in transforming controversies into innovation.

Theme categories that were found and which point to sustainability of this local policy were: value given to training; strategic leadership; and recognition of what had already been constructed. It can also be noted that, for the purposes of this study, some devices generated by the human and non-human actors, such as acting and learning in and as a network, also contributed in the production of innovations.

It is known that the knowledge and training of the actors for their own autonomy, development of skills and improvement of the environment and of ways of life are prerogatives of empowerment and ethical imperatives in the promotion of health.

The study produces evidence of the great importance of knowledge (cognitive translation) for producing reflexivity of action, transforming principles into practice of health promotion, and how dialog with the academic sector facilitates the mediation of these processes. This was evidenced in the development of the Healthy Master Plan, and in the implementation of the Triage and Composting Unit (UTC) in the municipality. Everything highlighted above contributed to the conception and implementation of a Healthier Sairé, as a public policy based on intersectoriality of all local actions.

It is perceived that what made the intervention more concrete and sustainable, at the phase of incentive to equity at which it currently is, was the existence of key actors influencing the management, and the role of the leadership in the municipal management, and its political commitment in relation to the pacts agreed with the population, starting from respect for and obedience to what had already been constructed.

Collaborations

MSM Freire and RMP Franco de Sá worked together in the article conception, write-up, critical revision and final revision. IGD Gurgel helped with the abstract writing, critical revision and final revision.

Acknowledgments

We thank Sydia Rosana de Araújo Oliveira, Simone Tetu Moysés, Leandro Castro and the interviewees from the municipality of Sairé.

References


