TUBERCULOSIS TREATMENT

DOTS IMPLEMENTATION IN SOME REGIONS OF BRAZIL
BACKGROUND AND REGIONAL FEATURES

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PROLOGUE

With the present global economic and social changes, knowing how to overcome new challenges in public health, such as fighting tuberculosis - a disease that afflicts disadvantaged social groups - assumes crucial importance, both nationally and internationally.

At this point, the Brazilian Tuberculosis Research Network – REDE TB stands out. This network began in 2001 as one of the Science and Technology Ministry "Millennium Institutes." It is the first organized movement in Brazil that has made a clear and effective interaction among different players from different cultural values and authority status possible, to fight a disease that has been disregarded by politicians, administrators, the press, television, and the university itself for the past decades.

In order to reach its goals Rede TB has mobilized researchers from Universities and Research Institutes and companies, governmental organizations, organized civil society, non-governmental organizations, and Health Councils as well, in order to integrate several tuberculosis control areas. During this period, it has acted as a permanent forum of interlocution anticipating tendencies, identifying opportunities, mapping competences, and developing products, procedures, and knowledge to control that disease.

One of the World Health Organization's strategies to control tuberculosis effectively is to establish supervised treatment (DOTS) but in Brazil, that strategy still faces serious difficulties to be established. One of the aims of Rede TB is to describe the background and implementation process of that strategy in some regions of Brazil. The results of the research contained in this book are consequences of integration among researchers from universities with the managers from state and municipal tuberculosis control programs, and the Pan-American Health Organization (PAHO) representatives in Brazil. They present basic elements to consider about models that can sustain DOTS implementation, and consequently contribute to a significant improvement in the epidemiologic indicators of tuberculosis in Brazil.

Célio Lopes Silva[1]

General Coordinator of REDE TB (2001-2006)

[1] Since October 2006 the General Coordinator is Antonio-Ruffino-Netto

SUMMARY

Public Health

Antonio Ruffino Netto

Infinites the dreams
Finites the achievements
Power disillusion
Accumulation of frustrations
To draw out from nothing
To light again new expectations.

02 17 2000

PRESENTATION

The results of DOTS implementation in Tuberculosis Control Programs in different countries are well known. The representatives of the World Health Organization (WHO) have insisted on its efficacy and effectiveness, promoting its implementation in different places where tuberculosis represents a public health burden. Brazil is among the twenty-two countries in this situation.

This work did not intend to study DOTS efficacy because several countries have already conducted such evaluations at different times – even Brazil, where supervised treatment coordinated by the Public Health Service Foundation (SESP) had good results in the 60's. In addition, there was no intention to present a lengthy study about DOTS in the country and/or a significant sample of it. Its goal was to describe DOTS implementation in some regions of Brazil, its background and features according to the characteristics of each region. Although DOTS was officially proposed in Brazil in 1998 by the National Plan for Tuberculosis Control (MoH, 1999), several problems in its implementation have been observed, varying according to regions, states, cities and even different neighborhoods in the same city. There are few studies published about DOTS in Brazil and most of them refer to aspects that analyze the efficacy/effectiveness of that strategy. Indeed, those studies do not emphasize operational aspects regarding the strengths and weaknesses of DOTS implementation that are due to local characteristics.

In this account, the goal was to join scientific knowledge and common sense as examples for other regions in the country and then, contribute to the search for models that can maintain DOTS as well as improve the performance of health services, and change the epidemiologic indicators of tuberculosis for the better in this country.

It is necessary to point out that the quantitative data from several regions in this study was from different sources of information. The data from the TCPs (state or municipal) were included in total. The local TCP coordinator indicated the source, which we respect. We are aware that, due to its limitation, such information can be challenged. However, the purpose of this study was only to report local situations before, during, and after the implementation of supervised treatment with all typical limitations of similar descriptive studies – and not to compare different regions.

There is another issue concerning the quantitative data: sometimes, a linear regression with only three or four points was done, although this practice can be technically flawed. However, the main concern of the authors was to present the tendency of the events analyzed and not their statistical association. That procedure could have been replaced by visual analysis of the way the points were distributed in space.

Finally, it is important to say that the written reports from collaborators as for style, way of presenting a topic, depth of analysis, among other characteristics, were respected because each one has his/her way of communicating. The collaborators were offered the opportunity to show spontaneously how they observed, perceived, interpreted, and reacted to DOTS implementation in their environment. The reader will soon notice the difference between chapters, because this project had the intention to present the descriptions by people from each region about their views, perceptions and reactions to the topic in focus – and not to force them to express uniformity.

It is fundamental to thank all the collaborators for their priceless direct and indirect contribution. We also thank the health professionals who have given valuable and relevant information, although they have not been included in the list of collaborators.

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BRAZILIAN TUBERCULOSIS RESEARCH NETWORK

INITIALS AND ABBREVIATIONS USED

CHA	Community Health Agents
DOTS	Directly Observed Treatment Short-Course
DOT	Directly Observed Therapy
MoH	Brazilian Ministry of Health
WHO	World Health Organization
PAHO	Pan- American Health Organization
COP	Community Outreach Program
TCP	Tuberculosis Control Program
PSF	Family Health Program
PUCRSP	Pontifícia Universidade Católica do Rio Grande do Sul
REDE TB	Brazilian Tuberculosis Research Network
SES	State Health Secretary
SINAN	National Disease Notification System
SUS	Unified Health System
SMS	Health Municipal Secretary
RS	Respiratory Symptomatic
ST	Supervised Treatment
SAT	Self- Administered Treatment
UEPB	Universidade Estadual da Paraíba
UFES	Universidade Federal do Espírito Santo
UFPB	Universidade Federal da Paraíba
UFPE	Universidade Federal de Pernambuco
UFRJ	Universidade Federal do Rio de Janeiro
USP	Universidade de São Paulo

CHAPTER I

OBJECTIVES AND METHODOLOGY OF THE PROJECT

This chapter will address the following topics:

- Objectives of the project;
- Methodology employed;
- Some final explanatory considerations about the amount of data collected;
- Project expansions.

Tereza Cristina Scatena Villa and
Antonio Ruffino Netto wrote this chapter.

1. OBJECTIVES

The goal of this study was to describe the background and the status of DOTS implementation in tuberculosis control in Central West Brazil, in São Paulo and Paraíba states, and in cities such as Recife, Rio de Janeiro, Ribeirão Preto, São José do Rio Preto, and Porto Alegre. DOTS implementation was described according to its five elements: political commitment, case detection/ laboratory support, TB treatment and ST follow-up, medicine dispensation, and information system. The analysis of the epidemiologic situation and operational aspects of TB control, before and after DOTS implementation in the above regions were prioritized when it was possible.

2. PROJECT DEVELOPMENT METHODOLOGY

This is a descriptive study. It contains collected history, operational and epidemiologic data about DOTS implementation in the above regions. The qualitative and quantitative approaches were used.

2.1. Qualitative Approach

The qualitative approach was used to describe the strategy implementation process. The data were collected through open and closed interviews with guiding questions about DOTS implementation (Appendixes A and B).

It is important to mention that in the places where DOTS had not been implemented, the qualitative survey was about information related to the reasons and/or difficulties for its implementation. Thus, the data collection tools were adapted for the new situation (Appendix D).

The subjects who were interviewed have participated in DOTS implementation. First, there was an interview with the coordinators of the TCP in each Region/State/City.

In the state, the coordinators of TCPs in priority cities were interviewed. In the cities, besides the TCP coordinator, during the interview, other key elements for the interview were identified: The epidemiologic control professional and local team that could help the patients.

Where the strategy had not been implemented, those in charge of the actions for TB control were interviewed, considering the same municipal categories.

2.1.1. Data organization and analysis

The data were analyzed using the technique of theme content analysis.

2.2. Quantitative Approach

The quantitative approach was used to analyze the operational epidemiologic TB situation before and after DOTS implementation. Epidemiologic and operational indicators from those regions were included, such as diagnostic bacteriology, TB cases with positive bacteriology, percentage of cure, default, death and failure. The data were collected from secondary sources (SINAN, EPI TB, LABTB, and tuberculosis control register book/black book, among others) through a specific tool (Appendix C).

2.2.1. Inclusion criteria

Only new cases of pulmonary TB with positive bacteriology were considered.

2.2.2. Data distribution and analysis

Data were distributed and analyzed through appropriated statistics

2.2.3. Study outline

The first GEOTB (Network for Operational Epidemiologic Studies in Tuberculosis (registered and certified by CNPq/2002) meeting was held in February 2005. This network of multidisciplinary researchers has developed new information

about tuberculosis: health assistance system, supervised treatment, and services distribution; adherence to tuberculosis treatment from the patient's and his/her family's point of view; disease epidemiology and theoretical studies focusing case management.

The GEOTB had a meeting with the state TCP coordinator in São Paulo in order to start the first contacts to implement the project, which would include the following places:

• **The Central West region:** because of the experience in treatment and DOTS implementation in health services in a big area, where favorable anti TB treatment results after DOTS implementation have been noticed. As a pioneer project, it has been the most sustainable one so far, producing better and better results, both operational and epidemiologic.

• **The States of São Paulo and Paraíba:** due to the experience gained in DOTS implementation. It is important to point out that the States would be studied from the priority cities, chosen according to the 1997 Strategic Plan.

São Paulo: State that has the most TB cases in the country (20 thousand cases in 2005). Twenty-six priority cities in it were studied.

Paraíba: because of the decreased rate of Default after DOTS implementation. Six priority cities in it were studied.

• **Cities**: Recife, Porto Alegre and Rio de Janeiro; Ribeirão Preto and São José do Rio Preto.

The second GEOTB meeting took place in the same month, having as participants PAHO consultant, Dr. Ademir de Albuquerque Gomes, the State TCP Coordinator in São Paulo and the Municipal TCP Coordinator in São José do Rio Preto. The goal of that meeting was to present some features of the regions selected for the study and define who would be responsible for managing the project in each place.

Knowing some features of those places helped to define several operational epidemiologic variables that were the basis for the preliminary construction of data collection tools. Then, it was necessary to adapt and validate them according to the characteristics of each place to be studied.

3. TOOLS CONSTRUCTION AND VALIDATION

The preliminary tools were created by the GEOTB under the supervision of Antonio Ruffino Netto and Tereza Cristina Scatena Villa. By visiting health service facilities, it was possible to decide, in scientific meetings, how to adapt those tools to local needs.

A first scientific visit in May 2005 to the TCP Municipal Coordinator in Recife, PE, made it possible to establish contact, get information on TB epidemiologic and operational status, and identify existing sources of information that could be used in the research. A second scientific visit in the end of May 2005 to the TCP State Coordinator in São Paulo served the same purpose. After the visits, the project implementators had extensive discussions on how to adapt and standardize the tools that would be employed in different regions of Brazil.

In order to improve the tools, there was a scientific meeting at REDE TB head office at USP, in Ribeirão Preto, in June 2005. Members of the GEOTB, researchers and health professionals from Rio Grande do Sul, São Paulo, Paraíba, Pernambuco, Rio de Janeiro, São José do Rio Preto, and Ribeirão Preto attended that meeting. The scientific meeting lasted two days and resulted in the consolidation of the final tools for data collection that were used in the study.

4. DATA ANALYSIS

The data were analyzed in an attempt to relate the results from the qualitative and quantitative stages.

The EERP USP Ethics Committee (Appendix E) approved the project.

APPENDIX A

INTERVIEW PLAN

1. What do you understand by DOTS strategy?

2. Explain the reasons for DOTS implementation.

3. How was the DOTS implementation process?

4. How easy or difficult was it to implement DOTS?

5. How did the mayor participate in the strategy implementation?

6. How easy or difficult was it in relation to political commitment?

7. How did health professionals assimilate the strategy?

8. How easy or difficult was the search for respiratory symptomatic individuals in the city?

9. How easy or difficult was it to get laboratory support in the city?

10. How has the process for expanding ST to health services been? How easy or difficult has it been?

11. How does ST take place (criterion, supervision, and frequency)?

12. Which is the predominant area and why?

13. How easy or difficult is ST?

14. How are drugs distributed?

15. What is easy and what is difficult in relation to drugs?

16. What are the difficulties in relation to the information system?

17. Would you like to make any comments?

APPENDIX B

QUESTIONNAIRE TO THE COORDINATOR OR CITY REPRESENTATIVE OF TCP AND OTHER PLAYERS

Element: "CASE DETECTION/ LABORATORY SUPPORT."

1. Do you conduct search for Respiratory Symptomatic Individuals?
( ) Yes. How: ( ) Routine at the units ( ) During mobilizations ( ) Others.
Specify:_____

_____

( ) No. Why not?: _____

_____

2. How long does it take to get bacteriology results?

_____

_____

Element: "TREATMENT AND FOLLOW-UP OF TB - ST CASES"

1. Who performs ST? ( ) nurse assistant/technician ( ) nurse ( ) CHA ( ) Others.
Specify: _____

_____

PLAN FOR DATA COLLECTION (Appendixes A and B)

This is a plan to guide the interviewer to fill out Appendixes A and B for data collection (interview with the TCP Municipal Coordinator or key informers).

The use of tools for data collection requires the standardization of some terms. Here are the main concepts presented in the Project "TUBERCULOSIS

TREATMENT: DOTS IMPLEMENTATION IN SOME REGIONS OF BRAZIL-BACKGROUND AND REGIONAL FEATURES".

DOTS means *directly observed treatment short-course* for tuberculosis control in the public health system. It includes five essential elements: 1. Governmental commitment to financially support control activities; 2. Detection of cases through microscopy of secretion among symptomatic patients who use health services; 3.Six to eight month standard treatment regimen for all confirmed cases after positive secretion exams, using Directly Observed Treatment ("DOT") at least in the first two months; 4. Regular supply of all essential anti tuberculosis drugs; 5. Standard system of registration and notification that allows safe conclusions about the treatment outcomes for each patient and of the control program in general (WHO, 2005).

DOTS implementation will be considered when the city has already started or concluded the incremental process of the strategy elements.

DOT/ST implementation will be considered in the year when the city has started to conduct supervised treatment.

APPENDIX C

TOOL FOR DATA COLLECTION ACCORDING TO EPIDEMIOLOGIC INDICATORS

Name of the person responsible for filling out the form: _____

_____

City: _____

Data collection source: _____

Considerations:

This is a data collection protocol to evaluate DOTS impact on the regions under study according to the epidemiologic operational indicators available in secondary sources of information, such as NSGN and TB EPI (the latter one is only for São Paulo state). Only NEW CASES OF *LUNG TB WITH POSITIVE BACTERIOLOGY UPON DIAGNOSIS, FROM DETECTED CASES TO FAILURE,* should be registered in this protocol and all items must be filled.

YEAR/VARIABLES	% CURE	% DEFAULT	% TB DEATH
1995			
1996			
1997			
1998			
1999			
2000			
2001			
2002			
2003			
2004			

Note: Fill out all the fields with absolute numbers and percentage according to the column above.

Terms definition

Pulmonary Tuberculosis: it breaks out as a chronic infectious syndrome, with low fever and cough with expectoration for more than three weeks and can develop into bloody spit and hemoptysis; it is a disease that wastes and weakens people by reducing their weight.

Cure: patients released from the hospital because they were cured.

Default: ST patient's absence from health facilities for more than thirty days or no measurement for more than thirty days in a row since the patients under DOTS last took drugs (MoH, 2002) constitute Default.

Death: patient's death from TB (MoH, 2002).

APPENDIX D

INTERVIEW PLAN

1. What do you understand by DOTS strategy?

2. Have you implemented DOTS?

3. Talk about the reasons for not implementing DOTS.

4. What made not implementing DOTS easy or difficult?

5. Talk about the mayor's participation in TB control actions.

6. Talk about political commitment in relation to the TCP control activities.

7. Talk about the participation of health professionals in relation to TB control actions.

8. What was easy or difficult in actively searching for respiratory symptomatic individuals in the city?

9. What was easy or difficult in relation to laboratory support in the city?

10. Talk about forms of TB treatment follow-up.

11. How are drugs distributed?

12. What is easy or difficult in relation to drugs?

13. What is easy or difficult in relation to the information system?

14. How do you rate the quality of the information in the forms filled out?

15. How does the city use the information system?

16. Would you like to make any comments?

APPENDIX E

CONSENT FORM

Title of the research: "Tuberculosis Treatment: DOTS implementation in some regions of Brazil. Background and regional features"

Lead researchers: Professor Dr. Antonio Ruffino Netto (vice coordinator of REDE TB) and Professor Dr. Tereza Cristina Scatena Villa (Coordinator of Operational Studies of REDE TB).

Information about the research: We are conducting a research in some regions of Brazil starting with the study of DOTS implementation process according to five fundamental elements and operational epidemiologic analysis. Your participation is very important because you will be contributing to the production of new knowledge. Other regions of the country will benefit from such knowledge and it will contribute to DOTS sustainability. Thus, health services as well as the disease's epidemiologic indicators for tuberculosis control can be greatly improved.

Professor Dr. Antonio Ruffino Netto and
Professor Dr. Tereza Cristina Scatena Villa

I, _____, ID number: _____, having received the information above and aware of my rights listed below, agree to participate.

It is my right to receive all the explanations about the questions in the questionnaire before and during the research, being possible to give up my participation anytime if I feel like so; I am also assured that all information collected will be kept strictly confidential.

I am assured that my identity will not be disclosed and, this way, the official nature of all information will be preserved; in addition, the research is safe and it will not cause any individual or collective harm.

I should not incur any material or financial expenses during the research and it will not pose any risk, physical injury, or moral and ethic constraint. The researchers

take full responsibility for all developments in the different stages of the research, and it is certain that there will be wide disclosure of the results in the media and scientific journals where the research is accepted.

The results will be used only for the research and the researchers will keep them safe; the interviewee can request them at any time.

I am aware of what was mentioned above and I wish to participate in the research.

_____, _____, _____, 2005.

_____

Signature of the interviewee

We assure that the information obtained and the participant's identity will be kept confidential.

We are sure that we are contributing to knowledge gains in this area to improve the status of the population's health. We count on your priceless collaboration.

Best Regards,

Professor Dr. Antonio Ruffino Netto and
Professor Dr. Tereza C. S. Villa

Contact: REDE TB – Faculdade de Medicina de Ribeirão Preto and Escola de Enfermagem de Ribeirão Preto – Universidade de São Paulo
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Interviewee's name: _____

Interviewer's Signature: _____

5. COMMENTS

It is important to mention that only part of the data collected in the appendages was used in this publication. Other four publications resulted from the study-namely the five elements of the strategy, which can be found in the following publications: *A busca de sintomáticos respiratórios no controle da tuberculose no Estado de São Paulo, 2005* Mayra Fernanda de Oliveira's Master's Degree dissertation; *O tratamento supervisionado no controle da tuberculose no Estado de São Paulo*, 2005 Ricardo Alexandre Arcencio's Master's degree dissertation; *O compromisso politico na implantação e sustentabilidade da estratégia DOTS* Aline Aparecida Monroe's Doctoral thesis; *A situação da estratégia DOTS para o controle da tuberculose no município de Recife* Cinthia Midori Sassaki's Doctoral thesis. Those dissertations and thesis are part of the Nursing Post-Graduation Program in Public Health at EERP – USP.

CHAPTER II

TUBERCULOSIS CONTROL POLICIES IN THE HEALTH SYSTEM IN BRAZIL AND DOTS IMPLEMENTATION (1980 – 2005)

This Chapter will present:

- The tuberculosis problem magnitude;
- The decentralization of health services in general and specially in TCPs from 1980 to 2005.

Tereza Cristina Scatena Villa, Antonio Ruffino-Netto, Ricardo Alexandre Arcencio and Roxana Izabel Cardozo Gonzáles wrote this chapter.

1. INTRODUCTION

Brazil has nearly 180 million inhabitants and a federative system structured on three political-administrative areas: Union, States and cities. It has a Federal District, 27 states and 5,560 cities (IBGE, 2005). In 2004, 315 cities were priority for tuberculosis control in the 27 states, according to some criteria by the National Tuberculosis Control Plan (BRAZIL, 2004a).

Tuberculosis (TB) is an endemic "that was a public health problem in Brazil during all the 20th century" (RUFFINO NETTO, 2004), and it is known as "the neglected calamity" (RUFFINO NETTO, 2004). At the beginning of the 21st century, Brazil is the 15th among 22 countries that account for 80% of the reported TB cases in the world. The status of TB in Brazil shows 58 cases for each group of 100 thousand inhabitants, and although it is a curable disease, it still kills at least six thousand people a year. The percentage of cure is 72% and Default 12%. In some capitals, Default reaches 30% to 40%. Every year 111 thousand new cases are reported.

Those statistics are a big challenge for Brazil in relation to the goals agreed on with the WHO: to reach 85% of cure and reduce 5% of treatment Default. That is, Brazil is still below those figures and needs to improve access to health services and treatment (WHO, 2005). In 2003, there were 83,575 new cases, corresponding to an incidence coefficient of 47/100,000 inhabitants, with different rates varying from 19/100,000 in Tocantins to 79/100,000 in Rio de Janeiro (BRAZIL, 2005b). New data show a steady decreasing tendency in TB incidence in Brazil (WHO, 2005).

Those disparities justify adopting decentralization as a way to make public policies viable, because the country has very complex and varying characteristics. Those are present in the socioeconomic, cultural, demographic, and sanitary differences between regions. In this context, DOTS implementation makes sense, considering the changes in health policies from 1998 to 2005. Therefore, this chapter discusses the decentralization of TB control actions in Brazil as its priority, "combining historical and political circumstances" (MENDES, 1994) in health policies implementation during different periods in Brazil (1980 – 2005).

2. OBJECTIVE

The goal was to evaluate tuberculosis control policies in different periods of health policies implementation in Brazil.

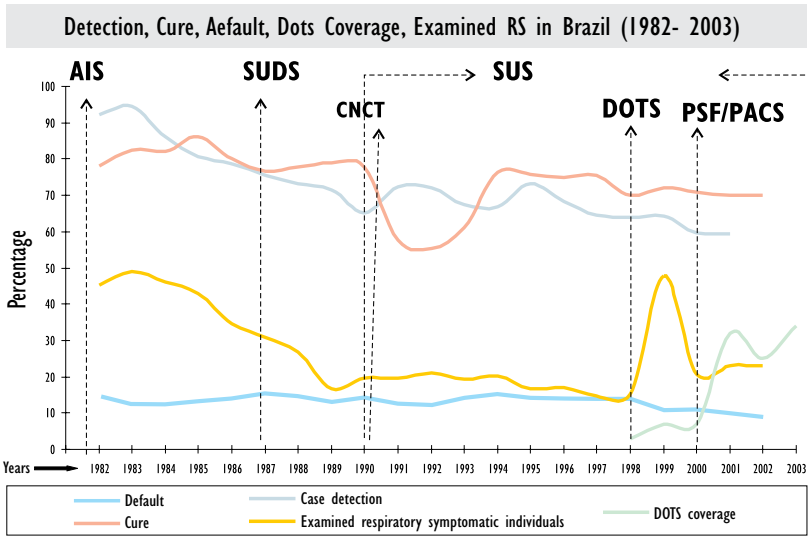
3. METHODOLOGY

It is a review of official documents of the World Health Organization and the Brazilian Ministry of Health, theses, and articles related to tuberculosis control policies in Brazil.

4. RESULTS

Graph 1 presents the general situation of tuberculosis in the last 25 years. It is an attempt to locate two different historical moments in order to evidence the decentralization process in each period and the epidemiologic impact through some indicators of the disease control.

GRAPH 1- General situation of tuberculosis according to epidemiologic indicators during the health decentralization process in the 80's, 90's, and 2000.



Sources: Ruffino Netto (2004): Ministry of Health (2005).

INICIALS IN GRAPH 1

AIS – Health Integrated Actions
SUDS – Health Decentralized and Unified Systems
CNCT – National Campaign against Tuberculosis
SUS – Health Unified System
DOTS – Directly Observed Treatment Short Course
PSF – Family Health Program
COP – Community Outreach Program

4.1 Decentralization from federal to state status: Health Integrated Actions (AIS), Health Decentralized and Unified Systems (SUDS) and Tuberculosis Control (1982 – 1986)

From 1981 on, new strategies for organizing health services were proposed. Decentralization, through agreements, to integrate federal and state institutions (INAMPS, MoH, SES), and thus transfer TB control to SES was the ultimate goal. That strategy of institutional integration was called Health Integrated Actions (AIS) and, since 1987, with Decentralized Health and Unified Systems (SUDS), health actions, financial resources, health staff, and facilities (hospitals and clinics) have become responsibility of the Health Municipal Secretaries, instead of the Health State Secretaries. During this period, the decentralization process of federal health services to state and municipal status began.

In relation to TB control, short course therapeutic regimen (six months), free medicine, a single and growing information system, a model of clear and objective program, and self-administered treatment (RUFFINO NETTO, 1999) have been introduced to the National Program for Tuberculosis Control (PNCT).

According to Graph 1, from 1982 to 1987, there was a decrease in the case detection rates from 90% to 75%; the cure rate kept stable at around 80%; the number of examined RS fell from 45 % to 30% and the rate of Default kept steady at around 14%.

4.2. The Unified Health System (SUS) and tuberculosis control – 1988

The 1988 Federal Constitution created the Unified Health System (SUS) and Laws 8,080/90 and 8, 142/90 regulated it, which has characterized it as a "historical

window", represented by the country's re-democratization process, *a big bang-like* sanitary reform. Since then, the SUS has socially developed into a movement like a slow incremental process, especially through Operational Norms, consensually established by the three levels of government, and materialized through Ministerial Administrative Decrees (MENDES, 2001).

The SUS has incorporated a wide health concept. Such concept defines health as *everybody's right and duty of the State*, whose model of health assistance is based on universal, hierarchical, and decentralized access to it (BRAZIL, 1988).

In Brazil, two kinds of approaches for decentralization were implemented in the Health Unified System. One of them is a *decentralization* that consists of transferring some administrative responsibilities to lower hierarchical levels, with no autonomy or decision-making power. The other is *devolution,* transferring of decision-making power from one governmental organization to another in lower hierarchical level, which will then achieve political and administrative autonomy. Making certain federal government functions become state or city's responsibilities is an example of this approach (MENDES, 1998).

While the *constitutional* SUS proposes a universal public system for all Brazilians, the real SUS has consolidated itself as a sub-system inside a divided system for the ones who do not have access to private sub-systems. Therefore, a divided system in which three big systems coexist has been established: the Unified Health System (SUS), Direct Disbursement System, and Supplementary Medical Attention System. The SUS is a public system for 140 million Brazilians who do not have access to private health insurances and it has been structured focusing health services provision (MENDES, 2004). In Brazil, the Unified Health System (SUS), the public system, is responsible for assisting TB –related problems.

The decentralization process in the 90's was guided by the SUS Basic Operational Norms instruments that regulate responsibility shares, relationship between managers and criteria for federal resources distribution to States and Cities. They also deal with the organization of the health system (LEVCOVITZ, 2001).

The SUS implementation in the 90's was a complex challenge in a setting where thousands of mayors became important players in the health sector. The decentralization of health services faced financial, institutional, and administrative difficulties, so, its progress shows how complex it is to consolidate a national health policy in a huge, unequal country with a federative political system (*op.cit.).*

Consequently, in the 90's, because of a lack of commitment and funding for TB control by the government, there was a federal fragmentation of the PNCT (coverage reduction, decreased search for cases, worse treatment results, increased Default; weakness of state coordination, decreased supervision of the Program; drug production interruption and drug purchase in the international market). During that period, anti-tuberculosis medication was not available in the country and the structure of the health teams operating in the community was broken. There was no integration between the health assistance departments (RUFFINO NETTO, 2001; KRITSKI & RUFFINO NETTO, 2000). Therefore, the SUS implementation had institutional gaps at the very beginning.

According to Graph I, cure rate suddenly decreased between 1990 and 1993, maybe because of the end of the National Campaign against Tuberculosis (CNCT). CNCT was designed in 1946 and it was marked by the State's intervention in the coordination and attention to TB through vertical programs and specialized staff (BARREIRA, 1993).

Since 1993, cure rate has been increasing and case detection rate has decreased. That can be explained by a slump in active search for examined cases of RS in the health services system. In that period, the TCP was established in the cities, reproducing structures with specialized teams in assistance, and actions for active search were little by little incorporated in the routine of health services.

4.2.1. DOTS

From 1993 on there has been a significant increase of cases of tuberculosis worldwide; so significant, in fact, that the World Health Organization (WHO) declared TB a world emergency, proposing DOTS (Directly Observed Treatment Short Course), whose main goals are to reach 85% of successful treatment and 70% of case detection.

Five fundamental elements compose DOTS: "detection of cases by bacteriology among respiratory symptomatic individuals who request general health service attention; standard short course treatment, directly observed and monitored in its evolution; regular supply of drugs; a registration and information system that assures the evaluation of the treatment; government commitment, placing tuberculosis control as priority among health policies" (PAN-AMERICAN ORGANIZATION, 1997).

DOTS is one of the priorities for TB control – mainly for the 22 countries that account for 80% of TB cases in the world – and it proposes "integration of primary health care and continuous adaptation of reforms within the health sector" (WHO, 2002).

In the 90's, during The Unified Health System (SUS) implementation process, the tuberculosis problem got worse in Brazil. That time was marked by crises of "*health funding squeeze*," since the resources for clinical actions were limited (CORDEIRO, 2001) and that, probably, accounts for a figure below 85% in cure percentage as well as for the gradual decrease in case detection, according to Graph I.

All that negligence about public health, and especially about TB detection, made DOTS, helped by the TCPs, gradually establish in the cities as a strategy within the Unified Health System (SUS).

In 1998, the implementation of the National Plan for TB Control (PNCT) occurred nationwide. That plan "*defines tuberculosis as priority among governmental health policies, establishes guidelines for actions, and establishes goals to achieve its ultimate objectives.*" It admitted that the strategic organization of the three levels of the SUS administration (Union, States and cities) was an essential condition for that. In addition, the involvement of society and Non-governmental Organizations (NGOs), detection and diagnosis through bacteriology for all RS and contacts, availability of tuberculosis drugs, guaranteed supervised treatment, drug resistance control, and the use of an information system in accordance with the WHO guidelines were key factors.

The RS search curve declined all the time and it started to go up after de implementation of the National Plan for Tuberculosis Control (PNCT) in 1998. By introducing DOTS, the Default rate started to decrease, from 14% to 12% between 1998 and 2004. It may also have contributed to the rise in RS, since one of the DOTS basic elements proposes case detection through sputum smear. Therefore, the RS search curve tendency declined all the time and it only started to go up after de PNCT implementation.

4.2.2. Funding policies and TCP/DOTS administration

In 1998, the PNCT introduced two innovations: it established financial aid to the cities as a strategy and stimulated the search for new cases and treatment through benefits. The cities, by joining the strategies through an adhesion form, once again

committed to the actions developed by the Tuberculosis Control Program (TCP). An allowance through bonuses of R$ 150.00 [a hundred fifty Reais] or R$100.00 [one hundred Reais] was settled, whether there was supervised treatment or not. A new proposal for the TCP management based on the following concepts was established: reorganization (the covenants were eliminated); innovation (use of a new logic based on results); bonus; reinvention (DOTS); realignment (re- inclusion of the TCP in the Ministry of Health); concepts review (decentralization); new ways of learning; demonstration units (RUFFINO NETTO, 2002).

Therefore, a year after the plan implementation, when the amount paid for the sputum smear raised, there was an increase of 50% in RS, similar to 1982. It is important to point out that, during the historical series of the present study those two moments were considered milestones in relation to RS percentage.

The decentralization had a negative impact on TB control at the beginning, because the SUS implementation took place without any rational planning for the integration of vertical programs and transfer of activities to the local sphere. Extra budgetary resources were not considered for intermediate levels and the cities did not have regulatory power, manuals, or incentives that could support the implementation and success of the reform (KRITSKI & RUFFINO NETTO, 2000).

The 90's were marked by crises of "*health funding squeeze"* because the resources for clinic actions were limited (WHO, 2004). The steady percentage below 85% and the gradual decrease of case detection, according to Graph 1, could have been a consequence of this resource limitation, since the main aspect of attention to TB in this period was the outpatient clinic. Still in this period, the municipalization policy, established by NOB 01/96, instituted full management by the municipal system and full management of basic attention. It also redefined the responsibilities of the Union and the States (MENDES, 2004) and anticipated provisions able to highlight the value of epidemiologic practices in the SUS administration, besides the incentives for the Community Outreach Program (COP) and Health Family Program (PSF) (*op.cit.)*

The decentralization established by the SUS occurred through municipalization In it, the administration of the local health service system is responsibility of the cities, in spite of some concurrent competences with the Union and States. This organizational example of autarchic municipalization (MENDES, 2001) is the polar talus of autarchic regionalization and its origins lies in the Brazilian municipal federalism, but it was intensified in the SUS because of the basic Operational Norms. In a country where 75% of the cities have fewer than 20,000

inhabitants, the organization of the health service systems has led the SUS to a dramatic fragmentation (MENDES, 2004).

The reorganization of the local health service network represents a fundamental process in the reform sector and it is strongly dependent on administrative ability. Differences in management performance explain most of the gaps in terms of results and impacts on the population's health. A number of pre-requisites with a normative structure for cities' qualification (municipal health plan, PAB account, management report, health fund, implementation of a national health data bank, Municipal Health Council) are necessary for the decentralization process. However, analyses of the health decentralization process have shown the disorganization of municipalities and the precariousness of their technical administrative structure for providing services. Strategies of micro-regionalization and other management innovations have been encouraged (BODSTEIN, 2002). According to the WHO 2004 report, one of the six obstacles for the improvement of TB control programs was an incomplete decentralization (WHO, 2004).

However, in relation to tuberculosis, the different strategies in funding systems – as the incentives from Basic Attention Limit (PAB, 1998), both in its fixed component, (that uses *per capita* criterion) and in its variable component (that considers incentives to PAHO/PSF, to Epidemiologic Control Basic Actions, among others), "*don't always aim to lead to a greater integration of different levels of attention complexity."* Such was the case of endemic control and other vertical programs that were carried out in Brazil in a centralized way, they were successful to a degree, but were disorganized because of fiscal strain as well as by the decentralization process, leading to an epidemic recrudescence (ALMEIDA, 2003).

There is evidence that decentralization has also affected those programs significantly. Firstly, because they were not contemplated in the first rules, which focused medical assistance, such as NOB/93 and NOB/96; and secondly because of the local disorganization due to the central sphere retreat, which operated and coordinated the local vertical programs (BRITO, 2002).

So, according to Graph 1, in the 90's, the cure percentage was below the 85% figure set by the WHO and, in 2000, the percentage was still around 72% and the detection rate has been decreasing for the past years.

The progress of DOTS implementation has faced financial, institutional, and administrative difficulties in the municipal health systems and, therefore, its progress shows how complex it is to consolidate a national health policy in a huge, unequal country, with a federative political system (LEVCOVITZ, 2001).

4.2.3. The incorporation of TB control into Health Basic Care in 2000

In 2000, the Basic Attention Department (DAB), created by the Ministry of Health in order to rule the organization and administration of basic attention practice incorporated the PNCT and other health programs (Hansen's, hypertension, diabetes, among others). The main goal of that incorporation was to strengthen the relationship between the Family Health strategy as a "distribution channel" and other programs as "knowledge and specific service providers," thus adding tools to the organization of assistance (SOUZA, 2000).

Basic Attention funding, such as the Basic Assistance Limit (PAB), a strategy that could add some variable values to the fixed value as incentives for the Family Health Program (PSF) and for the Community Outreach Program (COP) was included in that reorganization movement of the health sector. Among the components of variable PAB, PSF, Epidemiology, Disease Control (MENDES, 2002) stand out in 2001, including tuberculosis control actions in them.

Public expenditure on health in 1993 was 15.7% of the total federal expenditure and its participation decreased to 13.8% in 2001 (BARROS, 2003).

The Health Care Operational Norm (NOAS SUS 01/2002) was created, expanding the responsibilities of the cities for Basic Attention. It established the regionalization process and a hierarchy in health services in search of a greater equity; created mechanisms for strengthening management power of the Health Unified System and it updated the qualification criteria for States and cities (Brazil, 2002). Then, a management agreement between the three spheres of the government, called Basic Attention Indicators Deal was designed as a national monitoring tool of health actions and services concerning basic attention. The agreement was a formal negotiation tool among administrators targeting health indicators previously defined. Interestingly, in 2003, the "ratio of Default in tuberculosis treatment" indicator was considered one of the twenty main target indicators for monitoring in basic attention (BRAZIL, 2004a).

The NOAS SUS 01/2002 aimed to overcome inefficacy and quality problems determined by autarchic municipalization. Unfortunately, it could not reach it because of the flaws in its design. However, it is important to point out that designing a new rule is a necessary condition, but it is not enough to overcome SUS problems, in case the perspective of incremental changes in the Brazilian public health system remains the same (MENDES, 2004).

The new Tuberculosis Control Plan in Brazil (2001-2005) has as strategies the introduction of bonus for all cities that have Basic Health Units developing TB control actions and supervised treatment, and encourages municipal participation in the TB Control Program. This way, it introduces new possibilities of intervention in its work proposal, counting on the PACS and PSF strategies. It suggests that such partnership will contribute to the expansion of the TCP actions, because those strategies focus the family and home as work tools. Thus, the Plan emphasizes the performance of the PACS and PSF teams as a tool in order to improve the therapeutic adherence and stop patients from giving up treatment. At the PSF/PACS units and other municipal health service facilities, the active search for respiratory symptomatic individuals and contacts should be a permanent action, incorporated to routine (MINISTRY OF HEALTH, 2000).

The present PNCT (BRAZIL, 2004b) is integrated with the Health Services network and it is developed through a unified program, carried out by the federal, state, and municipal administrations as a network. It is ruled by a policy of programming its actions as well-defined technical and assistance patterns, varying from the guarantee of free medicine distribution and other necessary products to preventive actions and disease control. This way, access of the population to the PNCT actions is complete. The creation of the Secretary of Health Surveillance (SVS) in the present structure of the Ministry of Health redesigns TB combat because it joins all surveillance, control, and prevention actions together, making integration of several programs possible.

The Program points to the need to consolidate the performance of the States and cities in TB combat under national directives, reinforcing coordination, planning, supervision and evaluation activities in the three spheres in order to correct errors that can be detected fast. According to studies that analyze the use of health communication and education materials and strategies, it requires the decentralization of their production in order to respect cultural and technical communication differences and, consequently, make such actions effective (BRAZIL, 2004b). In Brazil, besides the Supervised Treatment strategy (ST), the PNCT recognizes the importance of straightening out TB battle, expanding it into all health services within the Unified Health System (SUS). Therefore, it aims to integrate TB control with basic attention, including the Community Outreach Program (PACS) and Family Health Program (PSF) to assure an effective improvement of access to diagnosis and treatment.

Besides that, the PNCT emphasizes the need of Non Governmental Organizations participation (NGOs) and partnerships with national and international

organizations (Universities, the Brazilian Society of Pnemology and Phthisiology) for TB combat, such as: TB Global Coalition (STOP TB); International Union Against Tuberculosis and Respiratory Diseases (IUATRD); American Agency for International Development (USAID); the WHO, PAHO, among others. Through these partnerships and aids, the PNCT targets the synergism and the expansion of the impact of its actions for TB prevention and control.

TB Control Policies in the SUS should promote DOTS implementation whose coverage has been expanding gradually: 1998 – 3%. 1999 – 7%; 2000 – 7%; 2001 – 32%; 2002 – 25%; 2003 – 32%; 2004 – 32%; 2005 – 63.8% in Basic Health Units (BRAZIL, 2005a).

In an official report by the WHO about tuberculosis in the world, published in 2004, Brazil showed weak performance fighting TB when compared to other countries, even to those ones with a worse social- economic development. After that publication, the ones who were responsible for the coordination of the program in the Ministry of Health in Brazil (MoH) blamed the low performance of the country in controlling the disease on the resistance of previous administrators in decentralizing the TCP. However, the document states that fast decentralization could also have caused some lack of political commitment by the regional Administrations (DYE, et al., 2003; WHO, 2004).

In the face of new challenges, the need to define strategies of enabling the professionals who will be at the leading edge of an innovative and daring process that proposes providing health to all and even more, reformulating social imaginary picture of the disease (RUFFINO NETTO, 2001) sprung up. Therefore, TB is a present disease that depends on a change of mind, whether in relation to the reformulation of policies that emphasizes tuberculosis as a priority, management/coordination, or even the participation of teams responsible for the assistance to TB sufferers.

4.2.4. Funding for tuberculosis control actions in 2000's

In 2000, Brazil spent US$ 7.97 per capita on primary health attention, while only US$ 0.13 was spent on TB (BRAZIL, 2003). Since October 2001, "the subsidy for treatment release of the patient with Tuberculosis" was included in the "Strategic Assistance Actions" targeting the population groups considered priority by the MoH (MINISTRY OF HEALTH, 2000).

Since 2002, there have been some changes in values of subsidies paid for TB treatment release because of cure (administrative directive 14774/GM). This administrative directive establishes new subsidy values for TB control, for the report of new cases, for treatment release because of cure when the treatment is self-administered, and treatment release due to cure when the treatment is supervised (BRAZIL, 2002).

In 2004, a new system established by the MoH replaced the criterion to offer bonuses. It was an annual subsidy, dependent on a health plan designed by the cities. Specific TB funding according to administrative directive 2,646/GM of December 16, 2004 started for priority cities. The bonuses were not completely suspended because the MoH distributed the resources for priority cities in 2004 by means of an Application Plan that organized the distribution of the resources into five areas: capacity, health education, epidemiologic surveillance, lab, and supervision. The Ministry of Health gave those resources directly to the Municipal Secretaries.

The amount paid for self-administered and supervised treatment was suspended, that is, the bonus has been suspended since 2004 for DOTS cure or not.

The SIA SUS keeps on paying R$ 4.20 (four Reais and twenty cents) for each bacteriology for diagnosis and control, corresponding to previous codes. Payment via BDA for bacteriology performed by the cities (diagnosis and control) continues to be monthly paid by the Ministry of Health. The FAEC (Strategic Actions Fund) monthly pays the Health Municipal Fund an allowance as an extra resource. That resource should be used to buy laboratory products or anything else that the city finds necessary for TB control.

Since 2005, the TCP actions have been funded by extra payments, from Fund to Fund. These resources target the intensification of surveillance and disease control actions in the 26 States and District City (Directive No 2405, November 5th, 2004), 155 priority cities for TB (Directive No 2646, December 16th, 2005), and more than 159 other cities that were included as priority municipalities. The Tripartite Inter Management Commission, through the Technical Chamber, agreed on a grant to priority States and cities to encourage them to reach a 90% figure of information about the follow up period of reported cases belonging to the cohort of cases in 2004. It was not allowed to use this resource for TB control actions. Its use in the original sense should be certain, made sure mainly by the Social Controllers, represented by the Health Municipal Councils and by the coordinators of the programs.

5. FINAL CONSIDERATIONS

Although health policies in the SUS have gained new dimensions with the amplification of health as a concept beyond prevention and control of transmissible diseases, the tuberculosis control policies implemented were just slowly incorporated. Besides, the strategies adopted have not been strong enough to show the need of correcting the system's distortions or preserving what used to work well, avoiding a disorganized dismantling like that occurred in the 90's. Traces of interruptions in transferring proposals to the cities remain selective, not having universal and inclusive characteristics, such as financial support mechanisms, prioritizing the cities, with no specific funding for TB. The limiting factors for effective TB control are related to low effectiveness of the health services performance for prevention, diagnosis, treatment, and the bad quality of such actions. In addition to that, there is the absence of Civil Society as a partner for monitoring governmental actions.

TB control policy problems will not be well solved if they are dealt with exclusively in the normative technical realm. On the contrary, they depend on a political solution that involves different social players and the State participating in that process: social structure (economy, ideology, and politics), patients, health professionals, researchers, human resources producers, civil society, and NGOs. Such challenge includes discussing TB priorities in the SUS, funding mechanisms through plans agreed upon by the cities that establish new systems for funding health actions and services. Besides, bonuses to priority cities, as well as the development of mechanisms for inter sector integration involving health and other departments of the Brazilian society able to put together and use resources for effective control of the disease are essential?

Because all of that, it is fundamental to understand that:

(a) Decentralization demands skilled professionals for public health management. They should be able to use a set of specific tools in epidemiology, administration, and planning and have skills and functions to act at the central (management) and peripheral levels (Basic Attention);

(b) TB control requires a steady and regular funding source from the health system, targeting the TCP. It is important to assure financial resources and products for the TCP through a specific fund, because the transferring of financial resources to the city (PPI ECD) does not guarantee its use in the TCP.

(c) It is necessary to have a central "intelligence" that "thinks and guides the TCP activities," with competent technical assistants.

(d) Some TCP activities can be decentralized, like the supervision of medicine dose and active search/case detection (epidemiologic surveillance actions) in peripheral levels of the Health Services Network. At the same time, some activities should be centralized at the TCP coordination. There must be professionals with management and technical competence to develop activities such as surveillance information, regular supervision, and monitoring.

(e) Previous Human Resources training (HR) is necessary before the decentralization, in an organized way, adapted to the service, social control, and management.

(f) It is necessary to assure a system of registration and information for the Human Resources that act in peripheral levels of the Health Service Network (SS).In order for them to be responsible for information, data quality (suitability, consistency, coherence, etc), and also have epidemiologic, operational notions to use financial resources in TCP such system is mandatory;

(g) the community should participate to know how to demand that the health services provide the attention that is necessary and, for that, it is necessary to involve different players from the society and government, health professionals, researches and NGOs in forums about TB control;

(h) TB attention according to the Integrated Approach in the health system requires permanent and sustained actions in Health Primary Attention (APS). It involves specialized managerial functions in the administration of the system as well as the provision of integrated services. Some aspects of TB control and its technology are difficult to integrate into APS because they require a combination of specialized management and the provision of integrated services.

(i) The great lesson to be learned here is that the decentralization of the TCP actions requires a policy to enable HR in the technical, management aspects of information systems and lab support, a TCP coordinator in the city publicly committed to all areas of decision-making, and a specific funding.

6. COMENTS

This chapter can be very useful to understand how TB control actions are incorporated or not in the dynamics of health policies. In the text there was an attempt to reorganize TB control through strategies to decentralize the actions to the States and, later on, to the cities. That decentralization has effectively occurred with the progress of DOTS implementation since 2003.

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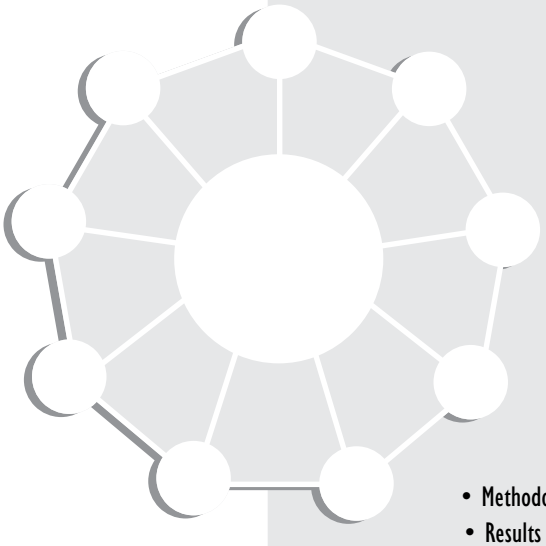
CHAPTER III

DOTS IMPLEMENTATION EXPERIENCE IN THE CENTRAL-WEST REGION



This chapter will present:

- TCP historical background in the Central West Region;
- Methodology used in DOTS implementation in the health services;
- Results and discussion about DOTS implementation in the region;
- Project sustainability

This chapter is a summary of Ademir de Albuquerque Gomes's Master Degree Dissertation, defended at Brasilia University in 2004, called "Epidemiologic evaluation of the implementation of tuberculosis supervised treatment strategy (ST) in the routine of priority municipal health services in Central West region, including Tocantins state (1998 – 2001)". Ademir de Albuquerque Gomes and Antonio Ruffino Netto wrote this chapter.

1. BACKGROUND

In 1996, when I was working in the Technical Area of Sanitary Pneumology (ATPS) at the Ministry of Health (MoH), I participated in a workshop in Caracas/Venezuela that was organized and sponsored by the World Health Organization (WHO) and the Pan American Health Organization (PAHO). The coordinators of tuberculosis control programs from the countries in the Americas were present. During the workshop, important subjects about tuberculosis control evaluation in those countries were discussed, such as epidemiologic and operational evaluation and main advances in the disease control so far. I participated for the first time in discussions groups about the possibility of offering patients a supervised treatment (DOTS). At that moment, the representatives from Peru had already had some experience in that strategy for five years with excellent results. I confess that I was touched by the possibility of applying that strategy in my country, starting with an experimental area for later evaluation and expansion.

When I returned, I reported the result of the meeting to the authorities of the national tuberculosis control program at the Ministry of Health. I immediately called the professionals responsible for the state coordination of the TCP in Mato Grosso, Mato Grosso do Sul, Goiás, Tocantins and District City, all of them from the Central West region. Still in 1996, the MoH divided the TCP into regions: North, Northeast, Southeast, South, and Central West. I was in charge of the TCP coordination in the latter one under the State Health State Secretaries that belong to it.

After the first contacts by phone, we started a bibliographic research about DOTS to read and understand the subject better. When the WHO and PAHO professionals visited the PNCT in MS for international supervision, we tried to talk about DOTS and their real experience in implementing it in different countries. Everything that we learned was essential to strength our certainty and conviction that DOTS could be successfully implemented in our environment. I visited the states mentioned above for meetings with professionals to discuss the advantage of supervising the patients when they take medicine compared to self-administered treatment. I confess that that task of touching the professionals about that new way of treating the patient was hard and difficult at the beginning because they claimed that among other impediments, the lack of time, many activities at health units, as well as a huge number of medical appointments and low salary were obstacles. Even though I was aware of all that, I kept insisting on the possibility of DOTS implementation.

In 1997, we started training and qualifying health professionals, the ones with university graduation (doctors and nurses) as well as the ones with high school graduation (nursing assistants). In those training courses, we talked about tuberculosis in general, from the characteristics of an etiologic agent, ways of transmission, infection, disease, treatment to prevention measures. Above all, we focused supervised treatment. The acceptance of the strategy by the ones under training was widespread, but integrating it to practice was hard. It is important to inform that even during the trainings some doctors questioned that task, claiming that it was the nursing department's job to supervise the medicine given to the patient. That was controversial during the trainings and we had to overcome it in the best way, which many times, was not so easy.

We came up with a RS Register Book and a Supervised Medicine Intake Follow-Up Journal that, like the Treatment Control and Tuberculosis Case Register Book (black book), has become an essential notification instrument at health units that conduct diagnosis and tuberculosis treatment and DOTS related activities.

Along with the trainings, as mentioned above, we started making state and municipal health administrators aware of the importance of supervised treatment as a way to decrease treatment Default and increase the cure percentage of tuberculosis patients in the city. The administrators who have always put the respective state and municipal Secretaries of Health at our disposal to implement the strategy have always welcomed us. Some of them requested financial help from the MoH, claiming that there is a lack of resources in their cities. That task was not so easy to handle.

After raising municipal and state administrators' awareness and training professionals from the basic health network in several hierarchic levels, the next step was DOTS implementation. There is a big difference between raising awareness and training and implementing. The professionals always claim that they are not sure enough to take on such responsibility and the arguments are all different, from issues about salary to lack of service infrastructure for that enterprise. That is another difficult issue to be solved by those professionals or administrators who wish to implement that strategy in the health service daily routine.

Routine supervisions and constant explanations were necessary to overcome that first obstacle during the strategy implementation. We had a lot of patience and perseverance for that first part of our work.

After some waiting, finally, in March 1998, we were informed by the head nurse from the Health Center in Cuiabá about the first patient diagnosed with

tuberculosis and registered according to the supervised treatment strategy. I confess the other professionals from that health center and I were elated. At the end of 1998, the first year of implementation, there were 66 patients registered in the supervised treatment in all central west region.

We started the year of 1999 with enough self-esteem, knowledge, and practice to implement DOTS in other health service facilities in priority cities in the Central West region States and others.

Along with the State Secretaries, we created a timetable for quarterly supervisions at the health service facilities that conducted the tuberculosis supervised treatment strategy. At that time, we checked the quality of DOTS underway through a cohort study and other variables used for TCP evaluation. It was also a rewarding, but hard task because of the high turnover of health professionals. That usually made us start all over as far as trainings are concerned. Professional turnover is a reality and we should always count on that possibility. In our supervision visits to health service facilities, the information that the nurse and/or the doctor trained at TCP/DOTS had relocated to another service facility and even to another city was frequent. The salary was another usual reason, which was a problem standing in the way of the implementation and sustainability of the strategy in health service facilities. Another problem noticed by the supervision was that DOTS had not been implemented, yet because the trained doctor did not have enough time to see the patient during working hours and the nurse would not take on the responsibility him/herself. That fact also makes the strategy implementation difficult and unfeasible. We understand that the commitment is political and it depends on the multi professional work team to improve health services as a whole, including the tuberculosis control program.

We had to conduct many new training programs in partnership with the state and municipal Secretaries of Health in order to help new professionals replacing the ones previously trained that, because of personal and/or professional reasons had to move to another place. In order to maintain the quality of DOTS, it is necessary and important to have a permanent plan to qualify professionals and a timetable for systematic and periodic supervision at health service facilities.

At the beginning, most of the health service facilities, claiming lack of time, included only those patients who were seriously physically weak, with advanced diagnosis of the disease, very bad general condition, with no steady address (homeless) and usually with HIV/TB co infection for supervised treatment. That action

itself already selected for supervised treatment a group of patients considered at high death risk or treatment Default risk. That fact was confirmed later by cohort analyses. Another difficult task was to touch the professionals to include in DOTS not only severely debilitated patients but also all tuberculosis cases, mainly positive pulmonary bacteriology patients. That task was not very easy at the beginning of the strategy implementation either.

All these problems at the beginning of the implementation were useful for our improvement, increasing our trust in the right way to deal with DOTS.

The difference for better between the supervised and self-administered treatments was clear during evaluations. That fact was always essential for us to make other professionals and health service providers aware that all efforts in implementing the supervised treatment strategy was worth it when patient's cure rate was higher than 85%.

Some statements (the ones I remember) before and after implementing the supervised treatment strategy of (DOTS):

BEFORE DOTS IMPLEMENTATION

- Nurse/assistant – *"I already have many tasks to do (he/she mentions the programs that he/she is in charge of) and now I still have to give medicine in the patient's mouth?"*
- Nurse/assistant – *"I have been in tuberculosis program for a long time and the patients have always taken the medication home. Why should we change it now?"*
- Nurse/assistant – "*I don't think it is necessary to keep watching the patient to take his/her medication. After all he/she is an adult and not a child."*
- Nurse/assistant – "*We have to trust that he/she takes the medication at home."*
- Nurse/assistant – *"I don't believe that the patient will come to the health unit to take the medication every day."*
- Nurse/assistant – *"I am not going to take care of any grown-up about taking medicine or not. It is his/her interest."*
- Nurse/assistant/doctor – *"This is too much paternalism."*
- Nurse/assistant – *"If I were the patient, I wouldn't like someone to watch me taking medicine."*

- Nurse/doctor – *"There isn't any proper place here to offer /supervise when the patient takes his/her medicine."*
- Attendant/assistant – *"we can't go to the patient's house because of the number of tasks assigned"*
- Nurse/assistant - *"It's necessary to offer something different to them – food voucher, milk etc…."*
- Nurse/assistant – *"The patient can't afford to pay for transportation to come to the health unit."*

AFTER DOTS IMPLEMENTATION

- Nurse/assistant – "*Supervised treatment is really better."*
- Nurse/assistant – "*Before DOTS, the patients used to quit the treatment a lot, but now they hardly ever give it up".*
- Nurse/assistant – *"I am happy when I see that the patient got better, won weight and he/she is more energetic and is back to work."*
- COP agent – *The patient that I follow calls me doctor and I am respected at his/her house."*
- COP agent – *"There are patients who are more difficult to deal with, but she/he can undergo supervised treatment."*
- COP agent – "*I started the supervised treatment well with my patient and after some time he/she was arrested; even so I continued bringing the medication to the prison for him".*
- *COP agent – (After the first part of the treatment) "Now that the patient is fine, I am going to continue until the end of the treatment seeing to it that he/she take the medication ."*
- COP agent – (*After the first two months of treatment). "Now that the patient is fine, I am going to continue supervising him/her. If I stop, he/she may give it up."*

2. METHODOLOGY

This analytical cohort epidemiologic study analyses secondary data collected by the researcher. Because of the high incidence of tuberculosis, the area includes 27 cities considered priority in the states of Mato Grosso, Mato Grosso do Sul, Goiás, Tocantins and District City. The criteria for the selection of those cities were the same used by the Sanitary Pneumology National Coordination (CNPS/MoH), at the launching of the Emergency Plan for Tuberculosis Control (EPTC) in 1996.

Five cities in Mato Grosso, six in Mato Grosso do Sul, seven in Goiás and four in Tocantins were selected. Asa Norte, Asa Sul in Brasilia, Gama, São Sebastião, Planaltina and Ceilândia were also included. Those cities and regions all together represent 75% of all tuberculosis cases in the Central West region.

In 1997, a group of technicians from the CNPS/MoH, formed by two doctors and one nurse, together with state and municipal Secretaries, evaluated the Tuberculosis Control Program (TCP) in the states: Mato Grosso, Mato Grosso do Sul and Goiás; they visited ten cities and twenty health service facilities. They analyzed 1,540 medical records of patients with pulmonary and extra-pulmonary tuberculosis who started the treatment in 1995 and 1996. That operational evaluation was the basis for the pre-implementation of the supervised treatment strategy in the region.

In this study, only new cases of pulmonary tuberculosis with positive bacteriology diagnosis, in fifteen year old or older patients, registered from 1998 to 2000 were included for the evaluation of the impact of the supervised treatment strategy (ST). Defining a new case of positive pulmonary tuberculosis followed the same guidelines by the Ministry of Health (MoH, 2002c) national rules for tuberculosis control.

Cases with diagnosis of pulmonary tuberculosis and negative bacteriology, extra-pulmonary tuberculosis cases, recurrences after cure and returns after quitting the treatment, as well as tuberculosis of any clinical kind in people younger than fifteen years old were excluded. Cases of pulmonary tuberculosis confirmed only by the culture of expectoration were also excluded. The clinical and laboratorial follow- up, the criteria to finish the treatment, and the conduct when controlling communicants as well as other actions, followed the guidelines offered by the Health and Surveillance Secretary (SVS) Sanitary Pneumology Technical Area (ATPS) of the Ministry of Health (MoH) to health service providers that develop TCP actions in the country (MoH, 2002c).

The new cases of tuberculosis of any kind, pulmonary and extra-pulmonary, were dealt with in the same way recommended by the Ministry of Health, which is Regimen No 1 (2RHZ/4RH). This regimen consists of administering rifampicin (R), isoniazid (H) and pyrazinamide (Z), during two months (first stage), followed by rifampicin (R) and isoniazid (H) for more four months (second stage). The medication was given every day (MoH, 2002c).

The daily routine of the basic health services teams remained the same during the implementation of supervised treatment strategy, including PSF and COP teams. The technicians from the Pan American Health Organization (PAHO) in Brazil carried out the implementation of that strategy in partnership with the Ministry of Health and state and municipal Secretaries of Health that participated in the study. There was a constant concern about possible limitations to the implementation of that strategy because of certain political, social, and human resources situations, the organization itself and the health services facilities infra structure.

The WHO (1997) recommended that in the first stage of supervised treatment strategy, supervision should take place from Monday to Friday in the first two months. On Saturdays and Sundays, the health service professional should give the medication to the patient who would, then receive some guidelines on how to take it at home. During the four remaining months, the second stage, the supervision should take place at least once a week. The COP agent could carry out the Supervised Treatment Strategy at the health service facility or at the patient's home. The participation of a community leader or a member of the family in that activity was not recommended. For those patients who agreed on having supervised treatment after the health staff had explained it to them, it was not necessary to sign a "contract" to go to the service facility regularly. Supplying staple foods at the end of each month of treatment, a meal, and transportation ticket every time the patient went to the health facility, as a form of incentive (PINHO and NOGUEIRA, 2001), depended on the mayor's decision, or existing resources.

The status of tuberculosis worldwide is associated to poverty, bad income distribution, and accelerated urbanization, which contributes to the disease's vicious circle. Even though such forms of motivation targeted selected patients, they were not in this project as an indispensable condition for the implementation of the strategy. That decision was made because of the future sustainability of DOTS in the country.

Regular supply of tuberculosis drugs was guaranteed for patients who, even after orientation and explanation of the strategy by the health staff chose self-

administered treatment, totally following the recommendations of the ATPS/SVS/MoH for patients under self-administered treatment.

The ATPS/SVS/MoH recommends that patients included in this strategy be supervised when taking medication at least three times a week in the first two months and once a week up to the end of the treatment (MoH, 2002c). Available information in the Register and Control of Tuberculosis Case Treatment Book, recommended by the ATPS/SVS/MoH as a tool that makes evaluation of effectiveness of local tuberculosis treatment (MoH, 1999) possible was used in this study as a source of primary data for the analysis of the impact of supervised treatment compared to self-administered treatment. Technicians from the PAHO, the MoH, State and Municipal Secretaries, and the Tuberculosis Control Program (TCP) in the 27 priority cities included in the study analyzed and consolidated the data every three months during periodic supervision. In all those evaluations, the participation of the professionals involved in the TCP actions in those cities was essential.

In a first stage, all tuberculosis cases registered in the Register and Control of Tuberculosis Case treatment Book from 1998 to 2001 were manually reviewed to check possible inconsistencies. Sometimes it was necessary to ask the reporting health service facility for clarification regarding the age and gender of the patient, date of the beginning and end of the treatment, and clinical form of the disease. After that manual selection procedure, 10,094 forms were typed using the Epi Info 6, 0 program for later evaluation and analysis.

After typing the forms, another data selection started, this time to eliminate (i) both duplicity of registers from the notifying health unit and from typing, (ii) cases of relocation to other service unit and (iii) patients who started treatment between 1997 and 2002. When the service unit that first diagnosed the case did not know the outcome of a treatment that patient (MoH, 2002c) was considered transferred.

After eliminating those inconsistencies, 7,882 forms of tuberculosis cases of all forms, registered by the 27 cities from 1998 to 2001 were selected. Among them, 4,085 were pulmonary positive tuberculosis and 3,630 were new cases. In this study, 3,544 pulmonary tuberculosis cases in fifteen year old or older patients with positive diagnostic bacteriology were considered new and treated using Regimen No 1. 3,408 (96.2%) out of 3,544 cases met the criteria by the Ministry of Health that defines positive pulmonary tuberculosis cases.136 (3.8%) cases were also considered new when they presented only positive diagnostic bacteriology without culture or when

they presented an X Ray image suggesting tuberculosis, according to the criteria by the Ministry of Health (MoH, 2002c) .

In the general evaluation, secondary data provided by the Technical Area of Sanitary Pneumology (ATPS) of the Ministry of Health (MoH) Secretary of Health Surveillance (SVS) were used. The Respiratory symptomatic individuals Register Book and the Supervised Medicine Intake Follow-up Journal were devised as part of this project, both implemented in the area of study. Those two recording tools are easy to fill out and they make the evaluation TCP local actions possible, in a periodical way.

The epidemiologic indicators of outcome or results of the treatment used, like cure, treatment completion, Default, death, transfer, and failure, are the same as those suggested by ATPS/SVS/MoH (MoH, 2002c). The success of the treatment, a recommendation by the WHO and adopted in this study, is the result of the total patients released due to cure plus the ones who completed treatment, showed in percentage of the number of cases registered in the cohort (WHO, 2003b). A patient who first presented positive bacteriology at diagnosis and that, during the treatment, had at least two negative bacteriology (one during the follow-up stage and the other at the end of the treatment), at month five or six was considered cured. These are the criteria established by the WHO and by the International Union against Tuberculosis and Lung Disease (IUATLD), as well as by the Ministry of Health. When the patient did not have bacteriology because of absence of expectoration and was released based on clinical evolution and complementary exams, both for negative pulmonary tuberculosis first and extra-pulmonary tuberculosis cases, he/she would be released because the "treatment was completed," based on clinical and radiological criteria. The other criteria to end the treatment at health units are described in the national rules for tuberculosis control (MoH, 2002c).

The analysis of the differences between the ratios found for several indicators such as bacteriology, and their becoming negative during the treatment control and for outcome indicators was performed using the Mantel Haenszel Chi2 test and calculating Relative Risks (RR) and its 95% respective confidence intervals. The level of significance considered was $p < 0.05$.

A multivariate analysis using Binomial Generalized Linear Model was performed in order to verify possible influences of other variables in the outcome indicators. Several factors, like control bacteriology in the second, forth and sixth month, the complexity of the service provider, HIV test, gender and age of the patients were included in the model. That method was employed in two different moments:

initially, having the cure as an outcome variable; later, the success of the treatment. The function glm (general linear model) R statistical program was used. The variables were added in sequence, followed by the interactions of each one of them with the result variable (cure or outcome). The final model selected included the variables that produced a bigger decrease of residual diversion, that is, variables that, largely, account for the outcomes as a whole with the kind of treatment, considering p values in Wald test and chi2 statistics of estimated coefficients. The adaptation of the model (adjustment quality) was evaluated taking the chi2 statistics significance level (p value) of Hosmer Lemeshow test for rejection of null hypothesis as a criterion.

3. RESULTS

In this study, 3,544 new cases of positive pulmonary tuberculosis in fifteen year old or older patients, using Regimen No 1 (2RHZ/4RH) were considered. Out of those 3,544 cases, 852 cases (24.0%) were diagnosed in 1998; 947 (26.7%) in 1999; 746 (21.0%) in 2000 and 999 (28.2%) in 2001. Among those cases, 17.3% were diagnosed in the District City; 18.5% in the state of Goiás; 28.3% in the state of Mato Grosso do Sul; 31.6% in the state of Mato Grosso and 4.3% in the state of Tocantins (Table 1).

Two levels of complexity to classify health service providers were established. Among all the patients in the study, 64% were treated at low complexity health service providers, that is, health units and 36% at high complexity service provides (Table 1). Out of 644 cases under supervised treatment, 511 (79.3%) were assisted at low complexity service providers compared to 2,900 cases under self – administered treatment, which included 1,757 (60.6%) that were assisted in those health units; that shows a big statistically significant difference (CHI 2 MH = 80.48; $p < 0.05$). The service providers with a chest doctor, local lab to perform bacteriology and/or radiology were considered high complexity ones.

Out of 3,544 cases, 62.4% were male and 37.6% were female (Table 1). Out of 644 cases under supervised treatment, 62.9% were male and 37.1% were female. Under self-administered treatment, out of 2,900 cases, 62.3% were male and 37.7% were female. The age varied between 15 and 97 years old (average = 39.1; standard diversion = 16.1; median value = 36.0).

The result of radiological exam of the thorax at the diagnosis was that, out of the 3,544 cases, 89.4% presented suggestive radiological image of tuberculosis;

0.5% was normal; 9.7% had not done their exam yet and 0.4% presented suggestive radiological image of other pneumopathies (Table 1). Out of 644 cases under supervised treatment, 86.8% presented suggestive radiological image of tuberculosis; in 0.2% the result of the exam was normal; 12.9% had not had the exam yet and 0.2%, presented suggestive radiological image of other pneumopathies. Out of 2,900 cases under self-administered treatment, 90.0% presented suggestive radiological image of tuberculosis; in 0.6% the result of the exam was normal; 9.0% had not had the exam yet and 0.4% presented suggestive radiological image of other pneumopathies. As for the HIV serological test at tuberculosis diagnosis, out of 3,544 patients, 3.6% presented positive results; in 15.1%, the result was negative and 81.3% had not had the HIV test (Table 1). Out of 644 patients under supervised treatment, 2.8% presented positive result test; in 17.5%, the result was negative and, 79.7%, did not do the test. Out of 2,900 patients under self-administered treatment, 3.8% presented a positive result; in 14.6%, the result was negative and, in 81.6%, the test was not done.

In average two or three treatment follow-up sputum smears were performed (average = 2.47; standard diversion = 1.73; median value = 3.0). Among 3,544 cases, 20% had not had any follow-up sputum smears (Table 2). Out of 644 cases of supervised treatment, 5.1% had not had any follow-up sputum smears. Out of 2,900 cases of self-administered treatment, 23.3% had not had any follow-up sputum smears.

Out of 3,544 cases, 396 (11.2%) had had only one follow-up sputum smear; 1,556 (43.9%) only two or three; and 884 (24.9%) more than three follow-up sputum smears. Out of 644 cases under supervised treatment, 51 (7.9%) had had follow-up bacteriology; 375 (58.2%) had two or three sputum smears ; and 185 (28.7%) had more than three. In contrast to that, out of 2,900 cases under self-administered treatment, 345 (11.9%) had had one follow-up sputum smear; 1,181 (40.7%) had two or three; and 699 (24.1%) had more than three sputum smears.

Table 2 shows the general percentage of negative bacteriology in the second (57.7%), fourth (52.8%) and sixty month (54.0%). As for conducting the follow-up bacteriology, according to the kind of treatment, the percentage was 77.8%, 68.3% and 74.5% and 59.7%, 50.8% and 50.2% respectively, showing that there is a significant statistical difference.

In relation to conducting sputum culture for diagnosing pulmonary tuberculosis, out of 3,544 patients, 165 (4.7%) presented positive results, 53 (1.5%) presented negative results and 3,326 (93.8%) had not had the exam before. Out of 644 patients under supervised treatment, 47 (7.3%) showed positive results; 20 (3.1%)

showed negative results; and 577 (89.6%) had not had sputum culture, yet. Out of 2,900 patients under self-administered treatment, 118 (4.1%) had positive results; 33 (1.1%) had negative results and 2,749 (94.8%) had not had the exam, yet.

According to the results of the treatment, out of 644 patients under supervised treatment, 84.5% were cured; 10.2% finished the treatment; 1.6% quit the treatment; 1.6% died; 2.2% were transferred (Table 3); there were no cases of failure. The treatment was successful in 94.7% of the cases, a result superior to the results found by ZALESKY (1999). As for those patients under self-administered treatment, 56.6% were cured; 13.2%completed the treatment; 12.3% gave up the treatment; 4.6% died; 12.4% were transferred, and 0.9% failed the treatment. The treatment was successful in 69.8% of the cases. Differences in ratios were statistically significant.

In relation to treatment follow-up bacteriology, the patients under supervised treatment had a higher number of that exam when compared to the patients under self-administered treatment. The differences were statistically significant (Table 4). When comparing the number of follow up bacteriology that became negative between patients under supervised treatment and patients under self-administered treatment, no significant difference was found (Table 5). However, there was a statistically significant difference among the total of patients of each group (Table 5).

The probability of cure was slightly higher for women and that difference was statistically significant (RR = 1.08; IC 95% = 1.02 1.13; p = 0.006). The probability of finishing the treatment was similar for both genders (RR – 1.12; IC 95% = 0.94 1.33; p = 0.22). In relation to the age, subjects younger than 40 years old had a slightly higher probability of cure, but that was not a statistically significant difference (RR = 1.02; IC 95% = 0.97 1.08; p = 0.44). A similar result was noticed in relation to the probability of finishing the treatment when the age groups above were compared (RR = 1.08; IC 95% = 0.91 1.29; p = 0.39). In relation to the complexity of the service facility, subjects treated in more complex service facilities had slightly higher cure rates than the ones treated at basic health units (RR – 1.09; IC 95% - 1.03 1.15; p = 0.002). There was no statistical significance association between the probability of finishing the treatment and the complexity of the health unit (RR = 1.17; IC 95% - 0.97 1.41; p = 0.09).

The analysis of independent variables in relation to their effectiveness to explain the variation of cure, besides the kind of treatment, when introduced to the Binomial Generalized Linear Model, proved more efficient to reduce the residual diversion of bacteriology in the sixth month ($p < 2.2 \times 10^{16}$). Bacteriology in the

second and forth months was more efficient in decreasing that reduction ($p < 2.2 \times 10^{16}$) and, to a lesser extent, gender ($p = 0.006$), the complexity of the service facility ($p = 0.002$), and age ($p = 0.01$).

A similar analysis with the same Model was employed to verify the influence of independent variables in the therapeutic success; in addition to the kind of treatment. The variables that were more efficient reducing the residual were the same with identical sequence: bacteriology in the sixth month ($p < 2x10^{16}$), in the forth month ($p = 1.01 \times 10^{13}$), in the second month ($p = 5.3 \times 10^{7}$), gender ($p = 0.003$), age ($p = 0.003$), and complexity of the service facility ($p = 0.047$).

4. DISCUSSION AND CONCLUSIONS

Out of 3,544 cases of positive pulmonary tuberculosis in this study, the highest rate (31.6%) was in the state of Mato Grosso and the lowest in Tocantins state (4.3%). The low complexity services, including mainly the health centers, were responsible for assisting 64% of the patients with tuberculosis, although, 36% of the cases received assistance in hospitals and/or reference service facilities.

For the patients under supervised treatment, 79.3% were assisted at basic health units in comparison to 60.6% of patients under self-administered treatment, showing a difference statistically significant. Among all the cases in the study, the disease was more predominant among males and there were not any differences between supervised and self-administered treatment. Age was between 15 and 97 years old and the average was 39.1 years old. The result of the thorax radiological exam at the diagnosis showed that 89.4% presented an image suggestive of tuberculosis. It is important to say that the radiological exam helps tuberculosis diagnosis, what explains its use when there is a suspect case. The radiological exam selects people presenting suggestive tuberculosis image and it is essential that those people have bacteriological exam. Diagnosis of pulmonary tuberculosis without investigating what has caused it using sputum smear is not acceptable, except in children. The radiological exam in patients with positive bacteriology aims to exclude associated pulmonary disease that needs concomitant treatment, besides allowing the evaluation of radiological evolution of the patient (MoH, 2002d). In relation to the anti HIV serological test at tuberculosis diagnosis, 81.3% of the patients had not had that

exam. Performing HIV test in patients with tuberculosis diagnosis is essential in order to define the treatment regimen and follow-up procedure.

Out of all the patients in the study, 93.8% had not had sputum culture and bacteriology at the diagnosis. According to the rules of the Ministry of Health, the culture is recommended for patients under suspicion of persistent negative pulmonary tuberculosis at the direct sputum smear exam, and for diagnosis of extra pulmonary forms of tuberculosis (MoH, 2002c).

As for the result of the treatment, the patients who had supervised treatment had cure and efficacy of treatment rates higher than the patients under self-administered treatment did. Those results were also higher than the results published in the WHO report in 2003 regarding the notified data in 2000 (WHO, 2003a). The result of the treatment in this study is similar to the one found by PINHO & NOGUEIRA (2001) and MUNIZ & VILLA (2002).

In this study, the supervised treatment strategy was more effective than the other variables, mainly the ones that involve treatment completion. There was an improvement in tuberculosis epidemiologic indicators, so its introduction into the daily routine of the services at health basic units is feasible. A regular timetable of quarterly supervision of those cities was designed as a way to evaluate the performance of the actions by the tuberculosis control program. Technicians from the Ministry of Health, the Pan American Health Organization, the World Health Organization, and from State and Municipal Secretaries of Health participated in this study. A coordinated action between State and Municipal Tuberculosis Control Programs, state and municipal coordination of laboratory, and family health and community outreach programs is necessary in the decentralization of Tuberculosis Control Program actions. This way, it will be possible to make the service more accessible to the patient, which makes the implementation of the supervised treatment strategy possible.

TABLE 1 Distribution of fifteen year old or older patients with pulmonary tuberculosis and positive bacteriology at the diagnosis, using Regimen 1 (2RHZ/4RH)

Central-West Region, 1998 – 2001

VARIABLE	NUMBER	PERCENTAGE
State		
DC	613	17.3
GO	655	18.5
MS	1002	28.3
MT	1121	31.6
TO	153	4.3
Total	3544	100.0
Complexity		
Low	2268	64.0
High	1276	36.0
Total	3544	100.0
Gender		
Male	2211	65.4
Female	1333	37.6
Total	3544	100.0
Thorax X Ray at diagnosis		
Suspected	3168	89.4
Normal	19	0.5
Not performed	344	9.7
Other pneumopathies	13	0.4
Total	3544	100.0
HIV Test		
Positive	128	3.6
Negative	536	15.1
Not performed	2880	81.3
Total	3544	100.0

Source: Register and Control of Tuberculosis Case Treatment Book– MoH

TABLE II

Follow-up Treatment bacteriology Performed

Priority cities in Central-West region, including Tocantins, 1998 – 2001

		NUMBER	PERCENTAGE
Number of sputum smears performed	None	708	20.0
	1	396	11.2
	2	489	13.8
	3	1067	30.1
	4	427	12.0
	5	271	7.6
	6	186	5.2
TOTAL		3544	100.0
Bacteriology in the second month	Negative	2044	57.7
	Positive	189	5.3
	Not performed	1311	37.0
TOTAL		3544	100.0
Bacteriology in the fourth month	Negative	1870	52.8
	Positive	44	1.2
	Not performed	1311	37.0
TOTAL		3544	100.0
Bacteriology in the sixth month	Negative	1914	54.0
	Positive	21	0.6
	Not performed	1609	45.4
TOTAL		3544	100.0

Source: Register and Control of Tuberculosis Case Treatment Book– MoH

TABLE III

Treatment outcomes, in accordance with the supervised strategy (ST) and self-administered treatment (SAT)

Priority Cities in Central-West region, including Tocantins, 1998 – 2001

	N	%	RR (IC 95%)	P* VALUE	SIGNIFICANCE
Cure					
ST	544	84.5	1.49(1.43-1.52)	$< 1x10^{-7}$	S
SAT	1641	56.6			
Completed treatment					
ST	10	1.6	0.13(0.07-0.24)	$< 1x10^{-7}$	S
SAT	356	12.3			
Quit treatment					
ST	10	1.6	0.13(0.07 – 0.24)	$< 1x\ 10^{-7}$	S
SAT	356	12.3			
Death					
ST	10	1.6	0.34(0.18- 0.64)	0.00036	S
SAT	134	4.6			
Transfer					
ST	14	2,2	0.18(0.10-0.30)	$< 1 \times 10^{-7}$	S
SAT	359	12.4			
Successful treatment					
ST	610	94.7	1.36(1.32-1.40)	$< 1 \times 10^{-7}$	S
SAT	2025	69.8			

Source: Register and Control of Tuberculosis Case Treatment Book– MoH

* Mantel-Haenszel Chi^2 Test

TABLE IV

Follow-up bacteriology according to the kind of treatment: supervised (ST) or self-administered (SAT) treatment

	N	%	RR (IC 95%)	P* VALUE	SIGNIFICANCE
Bacteriology in the 2nd month					
ST	501	(77.8)	1.3(1.24-1.37)	$< 1 \times 10^{-7}$	S
SAT	1732	(59.7)			
Bacteriology in the 4th month					
ST	440	(68.3)	1.34(1.26-1.43)	$< 1 \times 10^{-7}$	S
SAT	1474	(50.8)			
Bacteriology in the 6th month					
ST	480	(74.5)	1.48(1.4-1.57)	$< 1 \times 10^{-7}$	S
SAT	1455	(50.2)			
Bacteriology in the 5th or 6th month					
ST	505	(78.4)	1.41(1.34-1.45)	$< 1 \times 10^{-7}$	S
SAT	1613	(55.6)			

Source: Register and Control of Tuberculosis Case Treatment Book– MoH

* Mantel-Haenszel Chi^2 Test

TABLE V

Follow-up bacteriology that became negative, according to the kind of treatment, supervised (ST) and self-administered treatment (SAT).

	N	%	RR (IC 95%)	P* VALUE	SIGNIFICANCE
Bacteriology in the 2nd month (R)					
ST	456	(91.1)	0.99(0.96-1.02)	0.63	NS
SAT	1588	(91.7)			
Bacteriology in the 2nd month (T)					
ST	456	(70.8)	1.29-(1.22-1.37)	$< 1 \times 10^{-7}$	S
SAT	1588	(54.7)			
Bacteriology in the 4th month (R)					
ST	435	(98.8)	1.02(1.00-1.03)	0.063	NS
SAT	1435	(97.3)			
Bacteriology in the 4th month (T)					
ST	435	(67.5)	1.36(1,28-1,46)	$< 1 \times 10^{-7}$	S
SAT	1435	(49.5)			
Bacteriology in the 6th month (R)					
ST	477	(99.4)	1.01(1.00-1.02)	0.26	NS
SAT	1437	(98.8)			
Bacteriology in the 6th month (T)					
ST	477	(74.1)	1.50(1.41-1.59)	$< 1 \times 10^{-7}$	S
SAT	1437	(49.5)			

Source: Register and Control of Tuberculosis Case Treatment Book– MoH

(R) = Coefficient of bacteriology that became negative in relation to the subjects that had follow-up bacteriology.

(T) = Coefficient of bacteriology that became negative in relation to the total number of patients.

* Mantel – Haenszel Chi^2 Test

5. COMMENTS

According to the author of the dissertation, the main difficulty was in relation to the human resources training program. The high turnover of health workers involved conducting the same training program several times.

On the other hand, it is necessary to say that the study was conducted without any additional costs, except for staff training. The information system used was that recommended by the Ministry of Health (Black Book). A form was designed to control how the patients took medication. That form has been adopted and the PAHO has suggested its use in other regions in the country.

Even after the study finished, the strategy has been more and more consolidated in the region, showing the sustainability of the work done there.

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Deceits

Antonio Ruffino Netto

In the sterile soil of my dreams
I planted more a hope
I added new expectation
I increased new dreams
And I cherished all my wish
Awaiting for its realization

All I planted, withered
What I added, deducted
What I aggregated, pulverized
And from all this things, just remain
What is always is left:
I, a stubborn dreamer
An unredeemable
Who rebuild dreams one by one
In a gullible dreamy obstinacy
Even knowing nothing will to fulfill
So unfruitful the life...dreaming and all the dreams
All is ... and will always pass
In an endless delusion
A way to delude oneself
Replacing feeling by thinking

06 15 1992

CHAPTER IV

(I) DOTS IMPLEMENTATION EXPERIENCE IN SÃO PAULO STATE (1998 – 2005)

(II) DOTS IMPLEMENTATION EXPERIENCE IN SOME CITIES OF SÃO PAULO STATE

This chapter will present:

- a general view of decentralization of health services in São Paulo State from 1998 to 2005;
- Implementation of different elements of the strategy;
- An analysis of the tendency of cure, default and death rates in the period mentioned above;
- An analysis of relevant information for some priority cities in the state in relation to the TCP.

Chapter basically elaborated by Tereza Cristina Scatena Villa, Aline Aparecida Monroe, Roxana Isabel Cardozo Gonzales, Ricardo Alexandre Arcencio, Mayra Fernanda de Oliveira, Vera Maria Nader Galesi, Laedi Alves Rodrigues dos Santos and Antonio Ruffino Netto

(I) DOTS IMPLEMENTATION EXPERIENCE IN SÃO PAULO STATE (1998 – 2005)

1. DOTS STATUS IN SÃO PAULO STATE

1.1. Background

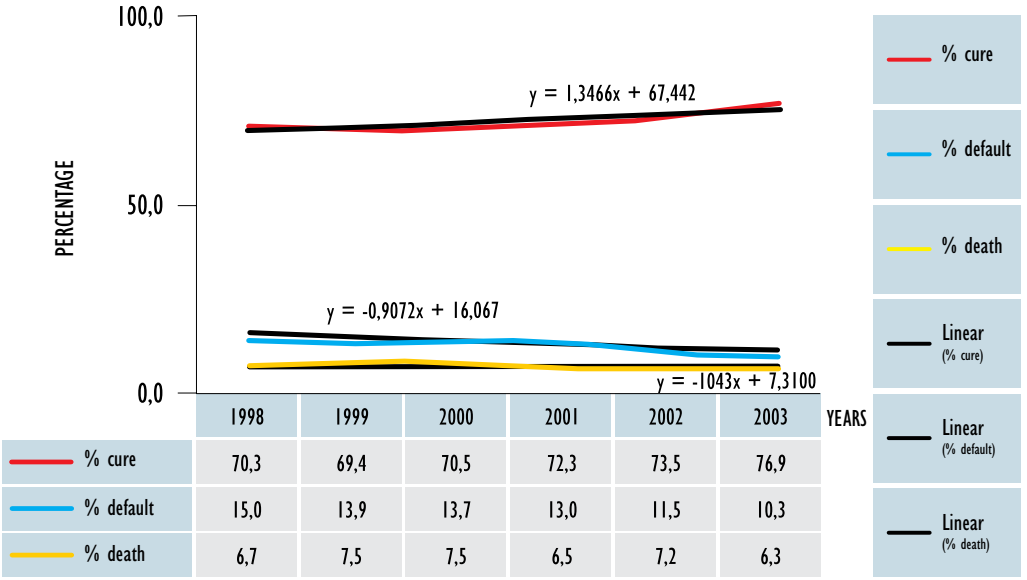
The state of São Paulo has 645 cities and a total population of 38.709.320 inhabitants. It is made up of quite different regions in relation to social-demographic indicators and epidemiological characteristics. The capital city and its metropolitan area, Baixada Santista, Vale do Ribeira, and the Central and West Regions of the state are distinctive in that aspect. There are great differences in the incidence of maladies (especially the transmissible diseases) between those regions. There are 24 health regions in the state and five of them belong to the metropolitan region of Great São Paulo. In 1995, there was a great improvement in SUS decentralization, with emphasis to the procedure of municipal qualification for different conditions of administration in accordance with the Basic Operational Rule (NOB) 01, 1996 and later with NOAS, 2001. Out of 645 cities in São Paulo state, 165 (25.6%) are totally in charge of the administration of the health system and 480 (74.4%) are totally in charge of the administration of basic health attention. During that process, all state units of primary attention were transferred to municipal administrations and community health activities have been municipalized little by little. In that context, the State Health Secretary has slowly changed with the advance of SUS implementation. The present role of the State, in relation to the Unified Health System, focuses the coordination of a regionalization process and the evaluation and control of health assistance by the cities. Guaranteeing equality between different regions and cities in the state, establishing investment priorities in health, and implementing programs and actions in health are other roles played by the State (BRAZIL, 2005).

Among several health problems in the state, infectious – transmissible diseases stand out, and among them is tuberculosis.

São Paulo state (SPS) has the most notified tuberculosis cases, with 20,690 sick people, and the cure rates are almost 76.9% (Information System of TB SPI TB/SES, 2003).

In Graph 1, it is possible to see that in SPS, from 1998 to 2003, the percentage of cure increased 1.35% per year. Simultaneously, the percentage of Default decreased 0.91% a year. The percentage of death decreased 0.10% a year.

GRAPH I - Percentage of cure, default and death in São Paulo State – (1998 – 2003)



	1998	1999	2000	2001	2002	2003	YEARS
% cure	70,3	69,4	70,5	72,3	73,5	76,9	
% default	15,0	13,9	13,7	13,0	11,5	10,3	
% death	6,7	7,5	7,5	6,5	7,2	6,3	

1.2. DOTS in São Paulo State

SPS was the first state to follow the Ministry of Health guidelines on DOTS implementation. In 1998, DOTS implementation took place in 36 priority cities, selected according to the Emergency Action Plan (Brazil, 1997).

Chart I presents new TB cases under supervised treatment in 2003. The data show that three priority cities in SPS reached over 90% of DOTS coverage; 11 cities reached coverage between 50% and 89%; 14 between 10% and 49%; and 6 than 10% (Chart I).

CHART 1 Coverage of TB new cases under supervised treatment in priority cities in São Paulo State in 2003

>de 90%	>50% e 89%	>10% e <49%	<de 10%	No DOTS
Itanhaém	Embu	Barueri	Caraguatatuba	Bertioga
Guarujá	Cubatão	Bauru	Franco da Rocha	
Campinas	Itaquaquecetuba	Guarulhos	Carapicuíba	
	Jundiaí	Jacareí	São Caetano do Sul	
	Praia Grande	Diadema	Suzano	
	Ribeirão Preto	Mauá	Ubatuba	
	Santo André	Mogi das Cruzes		
	Santos	Osasco		
	São José do Rio Preto	Piracicaba		
	São José dos Campos	São Bernardo do Campo		
	Taboão da Serra	São Paulo		
	Taubaté	São Sebastião		
		São Vicente		
		Sorocaba		

Source: Tuberculosis Information System – EPI-TB/SHS

1.3. Objectives

The general goal of this study was to analyze DOTS implementation in priority cities in SPS in 2005, and the specific objective tried to describe DOTS activities in the health system, according to the kind, and place where it was implemented, analyzing the political aspects involved in DOTS implementation and sustainability. It also tried to analyze the organization of supervised treatment to control tuberculosis and to evaluate the search for RS to control tuberculosis from the start of DOTS implementation.

1.4. Methodology

This exploratory study used the qualitative approach to delve into understanding the facts about DOTS implementation in TB control in SPS, from the Municipal Secretaries of Health (SMS) TCP coordinators' point of view.

A semi-structured interview with guiding questions about DOTS elements, highlighting analysis plan, political commitment, supervised treatment (ST) and search for RS was used to collect data. Information from a questionnaire with open and closed questions answered by the TCP coordinators from priority cities during scheduled meetings in some administrative regions in SPS in 2005 was added to the data.

Twenty-two TCP coordinators who agreed on participating in the interview, in accordance with Resolution 196/96 that regulate surveys with human beings, were interviewed. The goal of the study was previously explained to the subjects and they signed the consent form showed in chapter I of this book.

Data were analyzed according to the theme content analysis technique (MINAYO, 1999).

The study analyzed DOTS elements trying to observe its political and technical significance to guide the interpretation of facts and points of view presented by the interviewees.

The results of the investigation will be presented next as complementary sub chapters.

1.5. Decentralization of DOTS activities in the Health System in São Paulo State

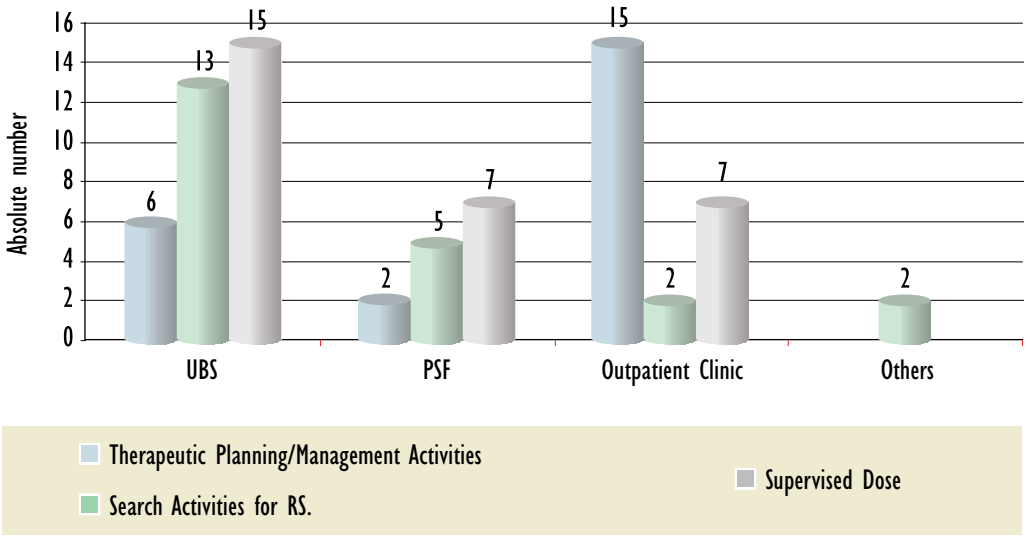
Data analysis made it possible to identify the decentralization of DOTS activities in the health system, according to the kind of activity and place where it was done, in 36 priority cities in São Paulo State that were selected according to the Emergency Action Plan (BRAZIL, 1997).

In relation to the kind of DOTS activity, the activities that are organized in a centralized way in the health system were selected according to personal accounts, and they include management activities, therapeutic planning, compulsory notice, information system, products and medicine planning, treatment monitoring and evaluation. They are performed by TCP specialized teams at SMS Outpatient /Reference

Clinics/Units. The technical activities, such as searching for RS and supervised ST/Dose, carried out at the most peripheral service facilities within the health system, such as UBSs and PSF, developed by general staff, were considered decentralized.

Graph 2 presents the kind of activity according to the facility that executes them (Basic Health Unit (UBS), Family Health Program (PSF), Reference Outpatient Clinic and others and occurrence of decentralization/centralization within the health service system of São Paulo State (2005).

GRAPH 2 - Kind of activity performed according to place and occurrence of decentralization/centralization in the health service systems of São Paulo State.



In graph 2, the results show that the activities that include therapeutic planning, management activities, among others are considered centralized in the testimonials, and they are performed at outpatient reference clinics (68.2%), and still in a centralized way by the SMS. However, it is possible to notice that that activity has already been transferred to the UBSs, in six cities (27.2%). The actions with operational technical dimension are activities that were decentralized to the peripheral units of the municipal health service system, mainly at UBSs (ST – 68.2%; Search for RS – 59%). However, ST actions (31.8%) and RS search (22.7%) have not been widely performed by the PSFs in studied cities in accordance with the National Tuberculosis Control Plan (BRAZIL, 2004) and the National Tuberculosis Control Plan (BRAZIL, 2000) that

suggested the incorporation of actions of RS search and ST by the PSF teams. Graph 2 also shows that the cities performed 31.8% of ST at Outpatient Reference Clinics.

The National Tuberculosis Control Plan identifies advances and difficulties in the TCP decentralization process for Brazilian cities. In many places, assistance to the patient still takes place at specialized outpatient clinics, but has not extended to the basic health network (BRAZIL, 2004).

The results of the investigation will be presented next as a complementary sub chapter.

2. POLITICAL COMMITMENT TO DOTS IMPLEMENTATION AND SUSTAINABILITY IN SÃO PAULO STATE (2005)[1]

The goal of this sub chapter was to discuss political aspects involved in DOTS implementation and sustainability in São Paulo State, in 36 priority cities, selected according to the Emergency Plan in 1997.

The political commitment is associated with the awareness of TB problem and the benefits of implementing effective strategies to control the disease. It starts with a decision by the central or local government to transform TB control into a high priority and center of activities of the primary health attention network (WHO, 1999).

The analysis focused Political Commitment to DOTS from the TCPs municipal coordination's point of view. The discussion about the data was guided by the theoretical reference about the organization of health service system (MENDES,2001), focusing the decentralization process, which has been one of the most emphasized organizational directives in the procedure of creating the Unified Health System to make its ethical and systematic principles feasible (BARATA et al., 2004). In Brazil, decentralization is a political-administrative process involving not only the transfer of services but also responsibilities, decision-making power, and federal resources to state and municipal Administrations (LEUCOVITZ et al).

Political commitment must translate into a formulation policy, use of human/financial resources and administrative support that are necessary to ensure that TB control be an essential part of health services (WHO, 1999). In Brazil, in 2001,

[1] The subchapter was written by Aline Aparecida Monroe, Roxana Isabel Cardozo Gonzales, Tereza Cristina Scatena Villa and Antonio Ruffino Netto. It is a summary of the results extracted from a Doctoral Degree Thesis underway by Aline Aparecida Monroe, from the EERP – USP, called: *"O Compromisso Politico na Implantação e sustentabilidade da Estratégia DOTS para o Controle da Tuberculose no Estado de São Paulo"*.

TB became responsibility of all cities according to NOAS, and TCP actions became responsibility of the Basic Health Attention service providers. Thus, the cities should prepare themselves to assist tuberculosis patients and their families because it is a belief that in decentralization, among other factors "**the transfer of responsibilities for the activities to control the disease and the participation of central, local, and peripheral key players"** is essential. Besides, the decentralization of health actions, without the effective participation of key players at different levels and delegating responsibilities is not possible.

2.1. The transfer of responsibilities for managerial and technical municipal TCP activities

Because of the testimonials, it was possible to identify that the managerial activities (dealing with information system, TB monitoring using the TB EPI database, planning and training/qualifying, and local teams supervision) are done by the TCP municipal coordination and they are centralized.

Experts to carry out centralized and specialized **managerial activities**, that is, professionals that have management skills to do all local actions planning, who have technical skills for training, supervising and monitoring local teams that handle TB control are necessary. Communication, political involvement, and constant negotiation with different spheres are part of the experts' duties to include the disease as a political priority in the cities, as well as to encourage the participation of health teams in assimilating TB local actions to maintain DOTS.

Some aspects of disease control and its technology are difficult to integrate with other components of primary health attention[2]. According to RAVIGLIONE AND PIO (2002), a specialized and integrated approach can be a practical solution for the success of TB control. Therefore, it is necessary to select experts with negotiation skills and competence to manage the actions to control the disease for DOTS implementation and sustainability. Besides that, it is important to keep TCP visible locally and centrally in order to guarantee the maintenance and incorporation of TB control actions into the municipal health system.

Technical activities, that is, compulsory notification, medicine dispensation, diagnosis, and treatment, observing medicine intake through Supervised Treatment

[2] Centralized philosophy that guides the organization of the Health Service System.

(ST), communicant follow-up and the search for RS have been strongly decentralized to the Basic Health Units (UBS), mainly, ST activities and the search for RS, which are DOTS essential elements.

"…when we got the strategy going, it started to decentralize (ST)…" (E2)

"… all health units search for rs…" (E19)

Some testimonials point to a decentralization tendency of diagnosis/ treatment activities and medicine dispensation to UBSs (27.3%), however, they still are described as centralized activities, and they take place mainly in the TCPs Outpatient Reference Units/Specialized Clinics (54.5%). One of the reasons for that centralization, in the municipal TCP coordinators' point of view, is that local teams, who work at UBSs are not well-prepared to incorporate those activities, since they need management skill to plan assistance to the sick person as well as handle the necessary local resources.

"…medical help is centralized (…) in order to make it easy for the patient to get the diagnosis, treatment… with a specialized professional that was trained to treat tuberculosis…" (E4)

Searches for RS and ST have been conducted mainly at Basic Health Units. According to testimonials, there is a possibility of decentralization of those searches to the PSF teams. It is possible that at the beginning it would be necessary to expand that strategy in São Paulo state so that the PSF could contribute effectively to TB control actions because the population helped by that kind of attention is still low (20.3%). There were 40,441,820 inhabitants in São Paulo state in 2005 and 8,202,830 people registered in the PSF Attention (MoH Information System on Basic Attention).

Although RS search is principally a decentralized technical activity, it is possible to notice a difficulty about its incorporation by local teams. MUNIZ et al (2005) argue that that difficulty is due to a lack of permanent qualification process and the way that health services are organized.

ST decentralization aims to expand coverage and facilitate patients' access to health services and their follow-up treatment.

"Supervised treatment draws the service closer to the patient...it is done at the unit closest to his/her house…" (E3)

The decentralization of diagnosis/treatment and RS search and ST search demand that the activities such as, medicine dispensation and the system of registration and notification be decentralized and organized parallel to one another. For that, minimally structured health services, training of local teams (engaged, aware, conscientious, and technically skilled staff), and continued supervision by the TCP coordination are necessary so that the activities can be effective and meet local needs.

That decentralization tendency of some technical activities reflects the integration of TB control actions into basic attention, including the PSF and COP in accordance with NOAS (2001). It is part of the National Program for TB Control (2004) to ensure the effective expansion of access to diagnosis and treatment to control the disease.

That situation confirms the conclusions of RAVIGLIONE & PIO's study (2002). Their conclusion was that the future is a pragmatic system combined with a strong central unit and well established regional and municipal management teams responsible for training, supervising, and monitoring (specialized management), with total participation of Primary Health Attention service providers in activities of case diagnosis and treatment (integrated services).

FRIEDEM & DRIVER (2003) noted that the decentralization of TCP actions poses both opportunities and risks for the sustainability of those actions. As for opportunities, there may be better efficiency and quality of services as well as an improvement of data analysis and use. However, according to the authors, the risks are significant. Decentralization may result in responsibility pulverization and lack of commitment, fragmentation of programs and treatment regimens, greater difficulty in developing ST, and deficiencies in the information system.

The decentralization of TB control actions, mainly from the transfer of responsibilities of some technical activities to peripheral levels of the health system is beneficial for DOTS implementation and sustainability in places where it is necessary to reorganize TB attention in order to expand access to diagnosis and treatment to contribute to an effective control of the disease. For that, it is important to highlight that it is necessary to select skilled professionals to manage and conduct that process in the cities.

2.2.The participation of key players in DOTS implementation and sustainability

Some testimonials (47.6%) pointed that municipal TCPs had some difficulties in relation to the availability of resources by health managers to develop TB control activities, among which is ST. That is one of the main problems in DOTS implementation and sustainability. TB is still a disease that needs to be highlighted in the **municipal health administrators'** agenda. Some reasons for that reality refer to the existence of other diseases considered priority to the municipality, financial difficulties, to administrative changes, among others.

> *"… in 1997, we had more financial resources…after that, there was that political problem, we had fewer resources, and then that stuff (ST) was over…" (E1)*

> *"… we didn't have a direct participation of the mayor because when we had DOTS implementation, the mayor was taking over a city that had many problems with human resources, so they weren't concerned about only tuberculosis…"* (E3)

> *"… that year, the change of mayors in our city, caused a structural change… so we lost the vehicle for surveillance and then there is no way to do the DOTS…" (E5)*

> *"…TB became priority in the city in August, 2004…when we could decrease the Dengue fever rate almost to zero…then, yes, there was TB…" (E9)*

The participation of the mayors also referred to the approval of TCP proposals, to subsidies to Basic Health Attention actions (decentralization of actions and incorporation of the PSF/ COP to the municipal network), subsidies to DOTS expansion, to the interaction with other key elements of the health system, and the production and updating of human resources.

> *"…he (the mayor) hasn't made our actions difficult…he allowed us to go to the units and talk straight to the employees and implement supervised treatment…" (E3).*

The participation of mayors is still weak in relation to the TB control actions and DOTS.

Political discontinuity and not having TB as priority, among other health municipal situations, were weaknesses related to the participation of the mayor and they weaken DOTS implementation and sustainability. Those weaknesses are constant challenges for the TCP municipal coordination and they require specific professional skills, negotiation with different levels (health municipal administrator, local teams, other governmental spheres, and community, among others) to include TB control actions in the municipal health agenda.

According to some testimonials, besides negotiation (57.1%), development of strategies to raise awareness of health professionals to assimilate the responsibility for local actions of disease control (81%); the possibility of decentralization of some TB actions (38.1%); and getting resources (14.3%) from other governmental departments are necessary activities typically performed by the **TCP coordination.**

> *"…from the decentralization…we had to organize a big educational campaign… so we started to qualify…" (E2)*

> *"…we used to go to the unit where there was supervised treatment, we tried to offer training to the employee…" (E3)*

> *"…in 2001, the Ministry of Health responded to our requests and helped us hire an agent…who worked with the patients and has helped DOTS decentralization…" (E9)*

The political participation of the TCP coordination with the mayors and local teams, the way of organizing the local health system targeting the Basic Health Unit and including TB in the health network agenda are facilitating elements for an operational DOTS to control the disease in the cities. The lack of resources (material, human and financial), a high employee turnover, and difficulty in understanding DOTS as an investment, the need of convincing health administrators and the lack of qualification of local teams to develop TB control actions, are obstacles that require constant action and managerial and technical skills by the TCP coordination for the implementation and sustainability of the strategy in the cities.

The lack of qualification of **local teams**, mainly those at the UBSs, according to 61.9% of the testimonials, has made the incorporation and development of TB control technical activities more difficult, and among them are ST and the search for RS,

essential DOTS elements. Therefore, that situation requires the participation of the TCP coordination in order to ensure qualification and supervision of such health teams.

> *"…UBSs professionals have difficulty accepting the strategy…they are not prepared… they think that it is one more task that we are assigning to them…" (E6)*

One of the obstacles for that acceptance is about the degree of complexity of assistance that a TB patient needs in the Primary Health Attention facility setting. That help requires that the health professional be committed to dealing with chronic conditions that involve specific skills for a special kind of help, because it is about long-lasting diseases, whose action planning should include social economic and cultural aspects, demanding a bond and co-responsibility between health service providers, patient, and family (WHO, 2002).

DOTS implementation and sustainability requires the health administrators' participation and the participation of the TCPs coordination and local teams, because it is not possible to make the strategy feasible if there is not any availability of resources with a specific grant for TB, besides negotiation by the coordination and an appropriate qualification of health local teams.

3. IMPLEMENTATION OF SUPERVISED TREATMENT IN SÃO PAULO STATE (2005)[3]

> *(…) each city, based on the guidelines in effect, should develop its Tuberculosis Control Program, according to its characteristics, mainly in relation to supervised treatment, suggested by the World Health Organization.*
> *(BRAZIL, 2000)*

This sub chapter is based on Supervised Treatment (ST). ST is one of the most widespread and proclaimed of the DOTS elements by the World Health Organization,

[3] The sub chapter was elaborated by Ricardo Alexandre Arcêncio, Roxana Isabel Cardozo-Gonzales, Tereza Cristina Scatena Villa and Antonio Ruffino Netto. It is a summary of the results from Ricardo Alexandre Arcencio's Master's Degree Dissertation, at EERP-USP, named "*The organization of supervised treatment in São Paulo state (2005)*".

whose objectives are about ensuring tuberculosis treatment completion, and decreasing Multi-Drug-Resistance.

Since 1993, when TB was considered a world emergency, ST has led to important advances in international policy for TB control, an increase in cure rates, and a decrease in Default rates.

In Brazil, ST was considered one of the priorities in Emergency Plan among the policies for TB control the for priority cities. Controlling tuberculosis in the cities where the disease had higher incidence, and where the resources could reach better results, causing a significant impact in the reduction of cases, was the main goal of the Plan.

Thus, every city has been improving ST according to its local situation, showing its autonomy in management and performance.

Data analysis was about the following topics of discussion: (i) the way ST has been conducted, considering criteria for patients' adherence; frequency of weekly supervision; predominant place of supervision and main players participating in the supervision; (ii) the profile of the teams conducting ST, and redeeming aspects related to **reception and bond**.

3.1.Operational technical aspects in conducting Supervised Treatment (ST)

Supervised Treatment is an essential strategy for tuberculosis patients because it ensures that the drugs are taken in the appropriate way and for as long as it is necessary (WHO, 1999). Therefore, each city has implemented ST according to its characteristics, adapting the strategy to local needs and availability of resources.

This way, the first operational technical aspect noticed was about the use of criteria to include patients in ST, and according to testimonials, 59% of the cities follow one of the directive principles of the Unified Health System, which has to do with universality. Moreover, that kind of organization uses the universal ST terminology. Therefore, universality is about including patients, regardless of the clinical kind, social status, and gender, among others.

According to a study by BAYER et al. in the United States (1998), universal ST is a method that can not only solve problems of failure, multi drug resistance, and TB cases, but also prevent the effects of the stigma when identifying groups at high risk of Default.

Thus, universality in helping people can soften prejudice, because it contemplates everybody and prevents some groups from being identified.

ISEMAN et al. (1993) believe that all patients in the country should be included in ST because the expenses are the same, or lower than traditional methods of self-administered treatment.

The CENTERS for DISEASE CONTROL (1993) consider that "ST should be considered for all patients because of the professionals' difficulty in predicting if the patients will adhere to the medicine regimen prescribed."

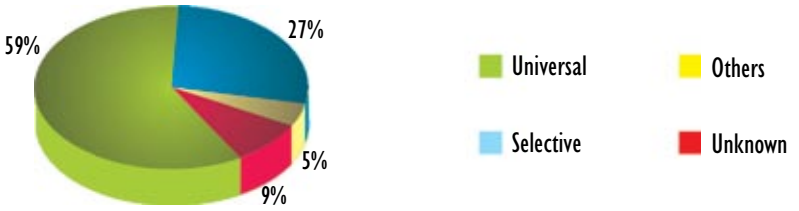
CHAULK et al. (1995) compared two phases of a program based on studies in Baltimore: the initial phase, when the patients were selected to participate in ST, and the current phase, when all patients are included in ST. The authors noticed a higher decrease in the number of cases in the city during the second phase, because when everybody participated in ST, the problems with the treatment were avoided, mainly for those patients whose adherence to the treatment was difficult to predict.

Since 1994, the Ministry of Health has been suggesting ST, mainly for patients with higher probability of default (BRAZIL, 1999).

According to some interviewees, it is difficult to include all patients in ST because of the availability of the resources; so the ones with higher risk of Default are priority, and they are identified in the first phase of the treatment from a subjective feeling based on the patients' behavior and habits.

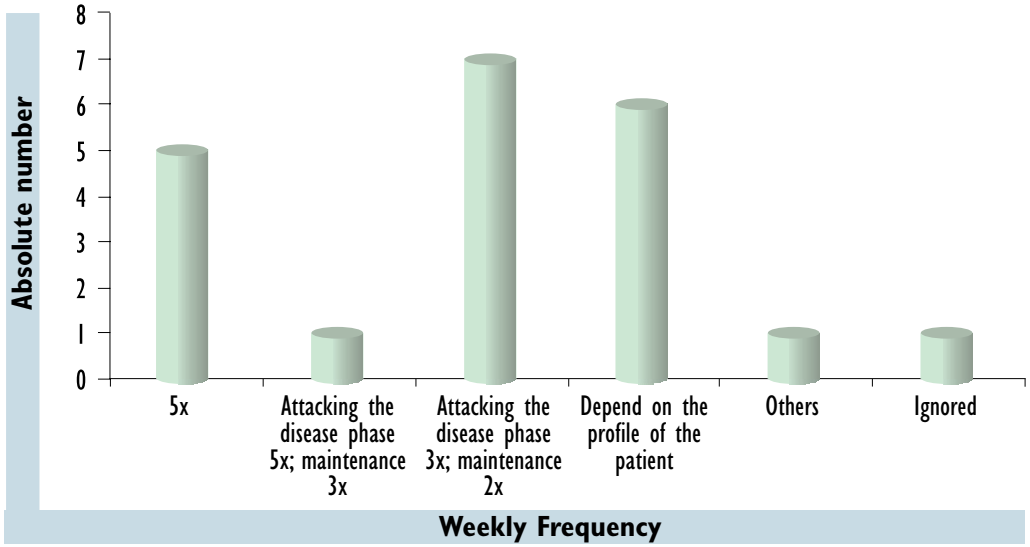
"…My assistant M. knows when it is necessary to be supervised…" (I14)

GRAPH 3 - DISTRIBUTION OF CITIES THAT USE OR NOT THE CRITERIA TO INCLUDE PATIENTS IN SUPERVISED TREATMENT IN 2005.



Another important aspect was the frequency of supervision, because according to Graph 4, most of the cities conduct supervisions three times a week when attacking the disease and twice a week in the maintenance phase, following the guidelines from the Ministry of Health. Other cities decided on the frequency of supervision according to the patient's profile. Therefore, there is a participation of the patient/family in the attention procedure that happens from the moment the decision is made to planning the actions to be done.

GRAPH 4 - Distribution of priority cities according to the frequency of weekly supervision/treatment phase in São Paulo State in 2005.



The patient's participation in deciding on supervision frequency can be considered one of the most fundamental points for adherence to the treatment.

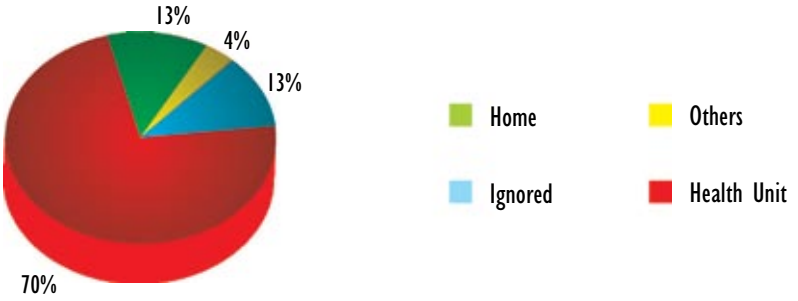
> *"…a boy…worked…dealing with drugs…I told to him to come once a week to take the medicine…if I told him to come everyday…he wouldn't come…" (I20).*

Medication supervision takes place mainly at the Health Units (Reference Units, Basic Health Units, PSFs). This way, the patient has to go to the unit to take the medicine. In some cities, like the bigger ones, that centralize ST in Reference Units,

public transportation tickets are available; in others, where ST is developed at Basic Health Units and Health Family Programs, the patient has to walk to the closest unit.

In some cities, because of adverse situations, when the patients cannot go to the Health Unit, supervision takes place at their home (Graph 5).

GRAPH 5 - Distribution of Places of Supervision in São Paulo State in 2005



Supervision takes place at home in 13% of the cities and the coordinators point this kind of organization as the one that is closest to the family environment, which makes establishing a bond between health service provider /patient/family easier.

> *"The possibility of going to the house, meeting the family, the patient, knowing about their reality, made our relationship closer…" (I 21)*

Thus, ST makes approaching the social reality of the subjects possible as well as the early detection of potential subjects or groups that can transmit TB, guaranteeing medicine intake and health education.

In relation to the key players involved in ST, there are more health professionals, although some cities can count on COP Agents, family and community members (Graph 6).

GRAPH 6 - DISTRIBUTION OF PLAYERS INVOLVED IN SUPERVISED TREATMENT IN SÃO SAULO STATE IN 2005

According to the testimonial of some interviewees, the participation of other players is beginning to gain importance and it can become an important partnership in conducting ST.

According to the interviewees' point of view, COP Agents seem to accept the strategy more easily than other professionals do:

> *"… because it is much easier to teach and get adherence by the community agents or by family health program members for the supervised treatment than at the basic units." (I 6)*

The Family Health strategy, that has COP Agents participation, aims to reorganize basic attention, in relation to health surveillance, representing a concept of attention to health focused on the family and community, with practices that target the establishment of new relationship among health professionals, their families, and communities. That way, it is possible to construct a new kind of health attention, fairer, equal, democratic, and comprehensive (BRAZIL, 2000).

Thus, the COP Agents start to be flexible players in assimilating new strategies, incorporating their concepts more easily, acting with creativity, and making the environment appropriate for performing ST.

Another aspect reported by the subjects was about the inclusion of members of community in the supervision to ensure treatment frequency and completion.

"…we asked the owner of the bar to help us supervise a patient drinking problems"… "it is necessary to give them medicine every day, dilute his drink…if he takes medicine with the drink it is ok, he can drink". He had the treatment, he was cured, supervised by the owner of the bar…" (Int. 6).

According a study to by ZACHARIAH et al. (2005) in Malaysia, when they evaluated the participation of the community in tuberculosis control, it was possible to notice that such participation seemed to be " an unexplored resource" and so, it is necessary to divide responsibilities between society and health service providers.

The participation of society shows that TB is not the responsibility of health professionals, the patient and family only, but of the community as a whole. Therefore, when the community uses its citizenship, it can contribute a lot to TB control.

According to COSTA (2003), private citizen's movements start to express a more participative dimension, trying to channel new social demands and get a more popular legitimacy. As for the redistribution of responsibilities between the State and society, that process prioritizes actions that focus solidarity and social justice, which, like cement, join blocks together. Active participation of social agents is able to strengthen potential relationships for cooperation among members of the society, contributing to its development.

This way, groups or organizations that have an important role in breaking the disease's transmission cycle- because they interfere with basic elements, like the supervision of medicine intake that ensures that the patient is taking medicine regularly, allowing satisfactory results of the treatment, besides evidencing their citizenship-, are formed.

Therefore, in each place, there was a distinctive way to implement ST, showing the viability of the strategy applications in different settings, as well as a positive way of seeing ST as a priority among the interventions for TB control.

3.2. Strategies of intervention for the patient's adherence

Many times ST is defined only as medicine intake supervision. However, according to the results presented here, it is possible to verify that the strategy has been developed along with other elements seen as essential in TB control, like

food provision, psychological/social/cultural support, co responsibility, bond, and reception.

According to the coordinators, besides medicine supervision, one of the strategies often used by the teams is about incentives and benefits (staple foods, milk, among others), elements considered facilitators for adherence and the establishment bonds.

Incentives and benefits, according to most of the coordinators, have contributed to the relationship between the patient and the health professional, considering that the professional starts to recognize the patient as a whole, in a holistic way, and the patient starts to value the professional's health actions.

TB is a social disease, so, patients that suffer a lot, with no human dignity have death as the only option:

> *"…Sometimes there are patients who live in such poverty that dying of Tuberculosis is not the worst thing for them…" (Int. 16).*

According to NETO (2004), the strategy for fighting Tuberculosis cannot focus only the treatment of the disease; it should also include fighting poverty.

TB is a terrible evil that affects society; a disease supported by poverty. Attacking only the disease – and that means medical programs and everything else that target the disease only – is like cure a deep wound like comfrey does: it heals a wound on the surface, but inside still lies the social wound.

Health teams need to have a more humane and ample notion about TB in this situation, something able to meet individual needs beyond the disease.

It is a fact that the incentives/benefits do not stop the poverty that affects society because they are only attenuating factors. According to the coordinators, however, the incentives/benefits can be considered important instruments in ST implementation because, besides encouraging the participation of the patient and family in the therapeutic process, helping adherence and treatment completion, they contribute to recovering biological conditions.

> *"… Tuberculosis is a disease that is closely related to social factors, so…it is important to improve the individual's quality of life so that he/she can have better conditions to be cured…" (Int. 10)*

Health teams end up understanding that the individual is subject of his/her own recovery process and is co responsible for promoting, maintaining and recovering his/her own health, respecting values and cultural differences. Thus, health teams and subjects create bonds that are able to consolidate their autonomy, besides establishing social networks.

This way, health teams resort to interventions that minimize or solve incidental problems those patients might have and add value to their traits. This situation causes teams from different sectors to interact.

> *"…each patient is different, and each patient deserves a different approach…" (I. 16).*

> *"…because, besides receiving some medicine, we address his/her other problems…" (I. 03).*

> *"…there was a boy that wanted to learn how to write at least his name. Nowadays he is studying…It is not only about the disease, but everything …" (Int. 14).*

> *"… I can refer him/ her to a first- job service …" (I. 14)*

> *"…a person who has no education, who doesn't have a job, who doesn't have anything in life…his/her self-esteem is very low…dying or not dying doesn't make any difference for him/her…it is even better to die than keep insisting on that supervised treatment is going to cure him/her…" (I. 13)*

Integrality opposes to the subjects' fragmental and reductive approach, so the professional's view, in that sense, should be total and capture subject's bio-psychosocial traits. That understanding should be characterized by a kind of assistance that tries to go beyond the disease and suffer and include more immediate needs that afflict the subject (ALVES,2005)

> *"… New professionals have to have very sensitive way to see the Tuberculosis patient. They have to see the patient as a whole. And he/she should try to know what…to do for that patient to feel like being cured…" (I. 16).*

Therefore, when health teams understand the individual beyond biological factors, they understand the psychological, social, and cultural dimension of the subject and resort to intervention strategies that contemplate the patients' needs in all aspects.

According to SILVA & BARBOSA (2004), getting sick is far beyond biology. This way, one can conceive that the disease process requires an explanation that involves multiple factors, and not only a cause and effect relationship between the bacillus and the infected body. Therefore, undergoing treatment involves accepting the social fact that one is "sick." As TB is a disease that is, according to social beliefs, associated to poverty and addiction, it causes stigmatization because it qualifies the "subject" as the one who is responsible for his/her own disease. Social and psychological help tries to promote greater comprehension about the disease process and treatment follow-up as well as the possible implications it might bring about.

Thus, psychosocial and cultural interventions make it possible for the subject to understand the disease and to cope with situations like stigma.

Therefore, bond, co responsibility, and reception are important bases when looking for total help and consolidating adherence.

> *"…She needed someone to talk to and then she [health professional] was the only person who used to go there and talk to her [patient]". (E. 20)*

> *"…She was a nursing assistant and she looked for that patient everywhere…she went to the place and left a message for him, saying that she was worried…that she would like him to go to the Health Center. When he received that message…he came to us and got cured…. He felt very important…" (I. 16)*

> *"…it was the directions given to family and patients... suddenly everybody was involved in the cure process…" (I. 16).*

According to some coordinators, the teams involved in ST implementation tend to work employing a model that is total, humane, and committed to meeting individual needs:

> *"…they took the patient to the dentist. When he saw that his teeth were beautiful, the started to shave and adhered to tuberculosis treatment…" (I.16).*

Availability to listen, commitment to the individual by health teams, and the use of dynamic groups for exchanging experiences among patients, are considered significant elements in building up adherence:

> *"…she has already tried to do the treatment three times and it has never worked. And now it is the fourth and she is succeeding… and she is a very good example… because maybe we didn't listen to her as much as it was necessary…" (I. 14)*

Therefore, health teams committed to ST strategies try to adopt a model that will incorporate some ideal concepts contemplated in the Health Reform plan, such as bond, reception, integrality, and co-responsibility.

4. SEARCH FOR RESPIRATORY SYMPTOMATIC (RS) IN DOTS IMPLEMENTATION IN SÃO PAULO STATE (2005)[4]

Searching for RS is one of the technical aspects of DOTS and represents one important strategy to detect TB cases. Bacteriology is reportedly the most widely accepted method to identify a TB case and to control treatment, because it is very specific. Besides, it allows the identification of the main source of infection transmission: the patient who carries the bacillus (II Brazilian Directives for Tuberculosis, 2004). DOTS Programs focus pulmonary cases, with positive sputum smear, which represent 50 to 60% of all TB cases, because they are the main source of infection for other people, and because those patients have higher rates of morbidity and mortality than the ones with negative sputum smear (WHO, 2005).

The National Plans for Tuberculosis Control have been focusing how important it is to incorporate actions for searching RS in the routine of health service providers as a strategy to increase detection of TB cases all over the country since 1998. Probably, the low case detection rates all over Brazil are related to the inadequate way that activity is conducted. According to the 2002 WHO report, the detection of TB cases in places with DOTS represented 10% of the estimated total and, in 2003, it represented 18%, which was much lower than the expected 70% (WHO, 2005).

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[4] This subchapter was written by Mayra Fernanda de Oliveira,Roxana Isabel Cardozo Gonzales, Tereza Cristina Scatena Villa, and António Ruffino Netto. It is summary of results collected for Maira Fernanda de Oliveira's Master's degree dissertation: *"A busca de Sintomático Respiratórios nos Municípios prioritários do estado de São Paulo (2005)."*

The theoretical reference that has guided the discussion about data was that about the Organization of Health System Services, focusing Health Surveillance in its wide concept. It is based on the diagram proposed by PAIM (1999).It is described as an *"amplified view of the health concept and formulation of models for the interpretation of determinants, risks, diseases and harm in light of modern epidemiology- organizing them into an operational scheme that redeems and amplifies the classical model of the Natural History of Diseases-, including both social actions organized by different players and the specific actions to prevent risks and diseases, as well as recovery and rehabilitation of the patients"* (VILASBOAS, 2003).

Health Surveillance is a model of assistance that includes contributions by a new geography, urban planning, epidemiology, strategic administration, and social science in health, politically and institutionally based on local health service decentralization and reorganization (TEIXEIRA, PAIM & VILAS BÔAS, 1998). It addresses disease control causes through health promotion; risk control by using health protection and search, and harm control using early diagnosis, harm reduction, and rehabilitation. This way, Search for RS was evaluated as a Health Surveillance strategy that allows **health protection**, **search, early diagnosis, and harm reduction.**

The participation of the professionals in RS search actions is about their participation in planning and conducting RS search actions to make such activity possible.

Employing available means and resources to conduct RS search in the cities is one of the **Strategies used for RS search actions.**

One of the structural aspects related to RS search is **laboratory support and RS search actions**, considering physical, material and staff structure, as well as the speed in performing exams or tests, which can make RS search actions easier or more difficult. How long it took to get the results of bacteriology was also considered.

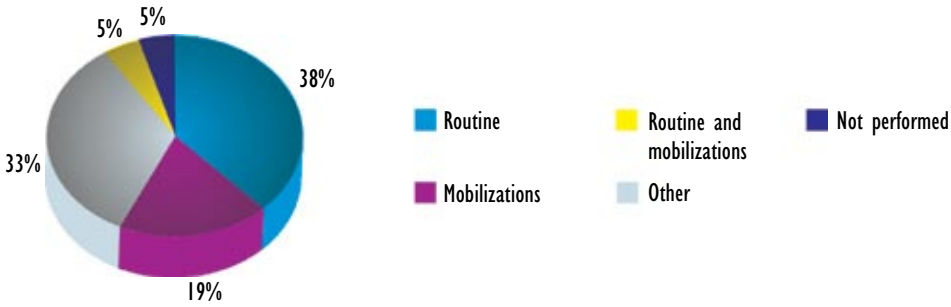
4.1. Organization of RS search:

RS search organization refers to the way it is conducted, **place where it is performed, and staff responsible for conducting it.** As for the way RS Search is done, it can be included in the activities of health service providers as part of the units' routine, performed in mobilizations or campaigns, or any other particular way in each city. Health service providers are responsible for **RS Search**, whether they are

basic health units, Outpatient clinics, or Health Family Programs/Community Outreach Programs. There may be or not specific professionals **responsible for RS Search activities**. They might as well be part of everyone's job at health units.

4.2. Ways RS search is conducted

GRAPH 7 - Distribution ways RS search was conducted in São Paulo State during DOTS implementation, 2005



According to coordinators/coordination members that participated in the study, RS Search in São Paulo state is performed mainly as routine in the units (38%) and through mobilizations (19%). However, the search is still incipient because routine focuses normal demand for health services more strongly.

The way RS Search is performed during the routine of health services shows the significant presence of a model of assistance based on "normal demand." This model is based on the hypothesis that a tuberculosis patient will look for health services when he/she notices a sign or symptom of the disease. It is important to say that many times the patient and the health staff do not consider cough. In many cases, Tuberculosis diagnosis shows that the patient has already been to several health service providers and no clinical evidence was found.

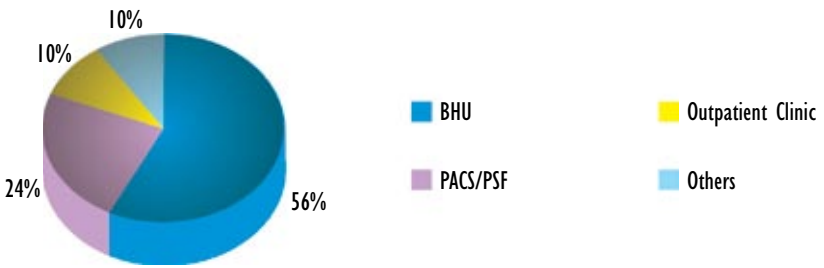
The model to be constructed, as the SUS has proposed, contemplates services targeting health needs, and the main problems should be identified in the community, in an "organized (or programmed) offer." "Organized offer" tends to outdo other ways of organizing health actions production like campaigns, special programs and those ones related to "normal demand." Early detection and timely treatment through

normal demand and search in the community is priority, focusing mainly closed places such as shelters, prisons, among others (PAIM, 2003).

It is difficult to include that activity in the routine of health service providers because of the lack of qualification, the kind of participation of health professionals, and the deficit in human resources for such activity. On the other hand, it has been very significant during mobilizations, because of the campaigns scheduled by the Ministry of Health. It is important to point out that those mobilizations follow national directives and not a strategy proposed by the health service providers.

4.3. Places where RS Search is conducted

GRAPH 8 - Distribution of places RS search was conducted in São Paulo state, during DOTS implementation, 2005.



According to the interviewees' testimonials, Basic Health Units are the main places RS Search is conducted (56%) and in some cities, they perform that activity in outpatient clinics (10%). It is important to point out that nowadays, that activity has extended a little into the Family Health Programs and Community Outreach Programs (24%) because of the decentralization of actions and health services and expansion of those programs; however, such expansion is limited because those programs are still not well developed in São Paulo state. This situation portrays the decentralization of Tuberculosis Control actions, among them, RS search, causing some changes in relation to the places that activity is performed, and the distribution of responsibilities among the health professionals.

According to the Health Care Operational Norm (NOAS, 2001), TB control actions have expanded and become part of the Basic Attention actions, which are now municipal responsibility. Therefore, cities have started planning and performing TB control activities with autonomy, which evidences the political and administrative decentralization in the country. That fact leads to the need to encourage a greater participation of local teams in making TB actions part of their daily routine.

4.4. People responsible for conducting RS search

GRAPH 9 - Distribution of people responsible for RS search in São Paulo State during DOTS implementation, 2005

As for staff responsible for RS Search, it is possible to notice that in most cities (66%) health professionals, including doctors, nurses, COP agents, dentists, psychologists, and receptionists, are responsible for that activity.

> *"We prepare our professionals, even the door man, because we have to understand that being a health professional is not related to the position we occupy… it is a health professional…so it is fundamental that all professionals get involved…" (Int. 10)*

4.5. Participation of health professionals in RS search actions

In São Paulo state, there are health professionals who participate in the actions of RS Search and there are health professionals who do not. In places where those professionals are more committed, RS Search actions are much more efficient. At the same time, in places where the professionals do not face RS Search as an important activity for tuberculosis control, this fact represents an obstacle for RS Search. There are cities where health units' staff has a proper participation, while in other cities this participation is not enough.

> *"The difficulty is that the staff doesn't feel like asking the patient…if he has cough." (Int. 1)*

> *"…we needed different, more conscientious teams. Nowadays, I can make them understand that it is necessary to know more about their patients." (Int. 9)*

> *"There are good and bad examples…In this Unit all professionals are engaged… And there are units where they aren't." (Int. 16)*

It is believed that many cases of tuberculosis have not been diagnosed correctly because the contaminated subjects do not have access to health services or because health professionals are not aware of respiratory symptomatic individuals (MUNIZ et al., 2005). That fact indicates that health professionals have not been participating in Search actions.

RS Search requires professionals to be attentive to not only the symptomatology but also to how long these symptoms have been present. The individual that has had cough for more than three weeks is considered a RSy. This period was standardized on purpose to eliminate an acute condition (MUNIZ, 2004).

Non-incorporation and non-development of RSP Search actions are a result of the lack of participation of local health teams, as opposed to an adequate participation that promotes the sustainability of those actions.

In places where there is COP and PSF, the teams encourage RS Search actions because these professionals are engaged with actions straight in the community. As mentioned above, although COP and PSF coverage is still low in São Paulo state (20%

according to the SES – SP data), those programs represent a possibility of achieving the reorganization of primary attention.

> *"We have available resources, we have COP Agents… And another thing that I really think is a contributing factor is the Family Health Program…" (Int. 16).*

4.6. Strategies used for RS search actions

According to testimonials, cities use different strategies to widen RS search, according to the characteristics and availability of resources. Those strategies are technical, bureaucratic, and educational, such as RS book, training program for health teams, RS stamp/pen, and RS search mobilizations/ reports.

Health Surveillance strategies can vary according to characteristics of the epidemiologic situation or according to the level of development, availability of resources and technical operational capacity of different regions, which invest them with a flexible and heterogeneous conception, based on the very epidemiologic and sanitary differences in the country (I BRAZILIAN CONGRESS OF EPIDEMIOLOGY, 1990).

The RS Book is a strategy proposed by Ministry of Health as a way to systematize RS Search, because it organizes the information about that activity. This strategy is still being implemented in São Paulo state and it aims at collecting data on all RS evaluated, like name, address, prescription of exams and exams results, mainly those regarding sputum smear. The interviews evidence that such strategy should be implemented cautiously, allowing previous training programs, and showing its importance to health teams, in order to make sure that teams are responsible for their actions conducting the Search activity.

> *"…we are attending a new training program that includes the Respiratory Symptomatic Individual book. Let's see if we can get a nice approach from those who are going to deal with it. Otherwise it is one more thing to struggle with." (Int. 6)*

> *"... It is taking me some time to keep the Respiratory Symptomatic Individual book, because I don't know what response we will have." (Int. 17)*

Health teams training is conducted in most of São Paulo state, facilitating RS Search. However, planning and organization are necessary to facilitate those programs because professionals have to be away from their work place, which requires a re-distribution of human resources that is not always possible for health service providers. That situation is a problem because it holds back the training program in terms of number of participants as well as the frequency such programs can be scheduled.

> *"The difficulty that I see is the professional. We have just finished a training…The Unit opposes to the training because of the lack of employees". (Int. 15)*

> *"… there are many training programs…nowadays we are including…to check if it is possible to get the worker out of the health unit so that we can upgrade our skills…" (Int. 19)*

The rubber stamp or the pen is a strategy used as a way of joining different specialties of the same health unit. All specialties of a health unit have a stamp or a pen that reads "Tuberculosis" or "DOTS." Therefore, health professionals of any specialty ask the patient about cough, rubberstamp his/her visiting form and, if necessary, refer him/her to the Tuberculosis Control Program.

That strategy is a way of making health professionals aware of their responsibility for RS Search, besides integrating attention to tuberculosis to other specialties. It is a way to follow the principle of integrality that targets individual needs.

> *"… we have introduced the stamp, too… we stamp no matter our specialty and ask about cough…" (Int. 12)*

Mobilizations and reports on tuberculosis symptoms and RS search are other strategies used for RS search. These are conducted in order to touch both society and health professionals, going beyond the boundaries of the health unit. There are several kinds of mobilizations/reporting. Each city chooses the one that is more appropriate to its physical and material resources and has more impact on target people. Among some kinds that are used, there are plays for the population and health professionals, radio or television broadcasts and also, parades and posters. The main messages are about cough as the main symptom of TB and about bacteriology as the most effective way of diagnosing of the disease.

"… we started with written messages… in all units, we had some messages…we talked on the media-on the television, the radio, everything…" (Int. 14)

Intervening, from the perspective of Health Surveillance, goes beyond sanitation medical knowledge and it includes social communication technologies that stimulate mobilization, organization, and participation of several groups promoting and defending life and health conditions (TEIXEIRA, PAIM & VILASBÔAS, 1998).

RUFFINO NETTO (2001) considers that it is necessary to create options for TB control that target collaborating, collective, total health practices in accordance with the reality of a community; practices that can go beyond the boundaries of Health Units.

It is necessary to employ strategies that make health professionals aware of attention to TB. For that, it is necessary that all health service providers previously incorporate Primary Health Attention (APS) characteristics. In that sense, it is necessary to trigger changes in the organization of the health service systems.

Managing TB, a chronic condition, depends on effective primary attention to health that prevents the progress of diseases. It is impossible to organize a good system of attention to chronic conditions the way it has been done nowadays. (MENDES, 2002).

4.7. Laboratory support and time it takes to get bacteriology results

According to the interviewees, São Paulo state has an appropriate structure of laboratory network, including its physical, material, and human resource organization; it also has an appropriate communication system between health units and laboratories. The laboratory network offers support for RS Search because there is an appropriate structure that makes bacteriology exams faster, permitting a higher demand for those exams.

"… the laboratory staff is connected to the units…" (Int. 2)

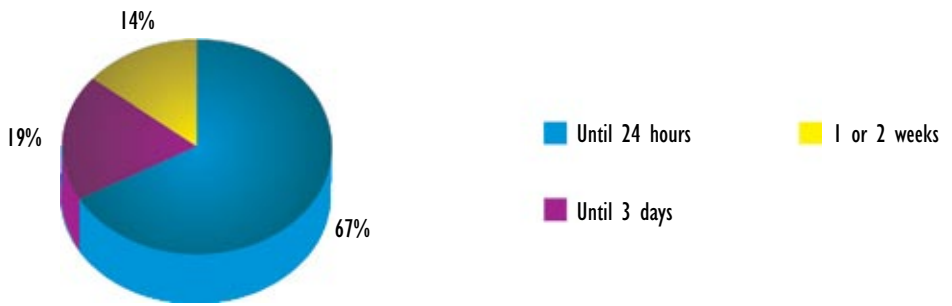
"…because of the organization of the laboratory I can help the population…" (Int. 6)

National Plans for Tuberculosis Control establish, in their directives, the need of organized laboratorial networks nationwide. They establish directives focusing the decentralization of those laboratories under the Coordination of the Public Health Central Laboratories (LACEN). They also extend the use of bacteriology to the Health Services Network in priority cities and recommend the implementation of sputum culture to identify Koch bacillus as well as the implementation of a Laboratory Information System for Tuberculosis (SILTB) at the LACEN and Laboratories in priority cities. Furthermore, those directives contemplate the implementation of quality control program for bacteriological exams in the laboratories and the guarantee of bacteriology results in 4 hours at emergency rooms and 24 hours at outpatient clinics (BRAZIL, 2004).

Graph 10 shows how long it possibly takes to get bacteriology results in the laboratories in São Paulo state. In 67% of the cities, it is possible to have the results in 24 hours if they are positive.

How fast exam results are disclosed is influenced by physical structure, by human resources and by connections between health service providers and the laboratory. Bigger cities promoted the municipalization of the laboratory network, which made prescribing and doing exams and reporting their results faster, because of the connections between the health service provider and the laboratory. Small cities have agreements with reference laboratories, so if there is not appropriate management and connections between parties it can take more time to report exam results.

GRAPH 10 Distribution of time it took to report bacteriology results in São Paulo State during the DOTS implementation process, 2005



5. FINAL CONSIDERATIONS

The decentralization of TB control actions, from the transfer of some technical activities, such as ST and RS Search to peripheral levels of the Health System, widens access to diagnosis and treatment to control the disease, being, therefore, favorable for DOTS implementation and sustainability. To conduct that process, it is necessary to count on skilled professionals who have managerial and technical expertise to take charge of the TCPs coordination in the cities.

In relation to the political commitment of key players in DOTS implementation and sustainability, there were some epidemiological (other priority diseases for the cities) and financial (availability of resources for TB control actions), and political (political changes in city Administration) difficulties for the participation of municipal health administrators. The participation of the TCP coordinators was mainly focused on permanent negotiation among different levels (mayor, local teams, other governmental spheres, community, among others), trying to make TB priority in the city's agenda. Besides, the continuous effort to develop strategies to touch local health teams and make them incorporate the disease, because it is clear that they are not prepared for that, has made technical activities to control TB, among them ST and RS search, difficult.

According to the results there presented here, the priority cities have designed the strategy according to their availability of resources and establishing important partnerships with the PSF, family members and the community. Although the partnerships are beginning, they already show positive results.

Flexibility of the teams to design ST, considering individual characteristics, was one of the aspects noticed.

RS Search in São Paulo state has been conducted mainly at Basic Health Units (56%), tending to expand a little into the PSFs and COPs (24%), which shows that that technical activity has been following the decentralization tendency of the health sector in Brazil.

In São Paulo state, there is a strong organization of the laboratory network with appropriate professional training in their work area and appropriate communication between laboratories and health services providers. Fast reporting of exam results (24 hours in 63% of the cities) is a consequence of that, leading to an improvement of RSP Search actions and, consequently to the increase of detected cases.

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(II) DOTS IMPLEMENTATION IN SOME CITIES IN SÃO PAULO STATE

1. DOTS IMPLEMENTATION IN RIBEIRÃO PRETO[5]

1.1. Ribeirão Preto and its health services network

Ribeirão Preto is a city in the interior of São Paulo state. It is located 319Km away from the capital and has an estimated population of 542,912 inhabitants.

The city has become a reference center in terms of health services and has assisted patients from the region and many other states in Brazil. It has a wide health services network (private, and public) that includes primary, secondary, and tertiary attention. There are 11 hospitals: nine of them offer general assistance (a public hospital school, three philanthropic hospitals, and five private hospitals) and two are psychiatric hospitals (one is public and the other is philanthropic). Six of them are SUS's partners.

There is a basic outpatient clinic network consisting of 33 health units: 28 basic units and five are District Basic Health Units (Vila Virginia, Castelo Branco, Central, Simioni, and CSE Cuiabá). Besides basic and specialized assistance, it offers outpatient clinic services to partner hospitals and to the hired ones. In addition, a Specialized Regional Clinic (NGA 59), a Psychosocial Help Center, and Mental Health Clinic provide services to the other cities in the region.

1.2. Background

The process of municipalization of health services in Ribeirão Preto began in the late 1987's. From then on there has been a significant expansion of the basic service network and, consequently, a redistribution of competences between the governmental spheres.

In 1989, with the implementation of the Municipal Secretary of Health's Epidemiologic Surveillance Service (presently, the Epidemiological Surveillance Division), the city incorporated epidemiologic surveillance actions. There have been

[5] This subchapter was written by Jordana Nogueira Muniz, Tereza Cristina Scatena Villa, and António Ruffino Netto. It contains information extracted from Jordana Nogueira Muniz's Master's Degree dissertation, 1999: "*O tratamento supervisionado no controle da tuberculose sob a percepção da equipe de saúde*".

important changes in information flow, that is, the way disease notifications travel. The city started to perform surveillance actions, participating actively in the system.

That service that counted on only two professionals at the beginning has to hire new staff annually because of the increase of municipal activities within the city's scope. The Epidemiological Surveillance Division has organized central groups with specific competences and activities in order to respond to the process underway that is transferring such activities to the Districts.

Gradually, functions were divided and each professional at the central level would be responsible for a certain group of diseases previously elected, and among them tuberculosis.

Although the information flow was centralized at the SMS's Epidemiologic Surveillance Department in Ribeirão Preto, the management of Vertical Programs, like Tuberculosis and Hansen's disease, was still performed by the state.

In 1995, 25 cities in São Paulo state were selected as priority for Tuberculosis combat and among them was Ribeirão Preto, because it presented a TB/HIV co infection rate around 30%, a 16% average rate of default and a 50% cure rate.

In December 1995, the Municipal Secretary of Health's Epidemiologic Surveillance Department organized the *I Tuberculosis and TB/HIV co infection Regional Forum* whose objective was to raise awareness among health professionals of the alarming situation involving tuberculosis in the country and in the city.

In March 1996, the Municipal Secretary of Health in Ribeirão Preto created the Tuberculosis Control Program Coordination, in order to comply with the proposals established by the Epidemiologic Surveillance Department. Thus, the city started to manage the Tuberculosis Control Program in compliance with the competences established by the National Coordination of Sanitary Pneumology.

Besides increasing service offers, the management and operational decentralization of the TB control Program resulted in an increase of municipal responsibilities. Equipment and products purchase, hiring and qualifying human resources, supervision and technical training to the health units teams in accordance with the rules pre established by the National Coordination of Sanitary Pneumogoly with technical support of the DIR XVIII and Tuberculosis Control Program State Division, were taken on by the municipality.

During that time, the Active Search for RS strategy was implemented at Health Units in Ribeirão Preto. Sputum smears that were historically performed by the Instituto Adolfo Lutz became responsibility of the city. Supervision and quality

control became responsibility of the old State Public Laboratories. Those changes required adopting some actions in order to reorganize assistance so that it could be possible to identify RS cases and to perform the sputum exam. Health networks were trained, laboratory flow was re organized, and the support service became municipal responsibility (sputum vials, Styrofoam containers, exam requirements, and transportation of materials).

A significant increase of sputum smears performed by the city, and diagnosed cases followed the implementation of active search for Respiratory Symptomatic cases. The inclusion of Ribeirão Preto in the Emergency Plan required the city to send the National Health Foundation a project about aims and estimated resources in 1996. Although that project was approved, the financial resource was available only in May 1997. One of its goals was to improve patient's adherence to the treatment, decrease default rates, and increase cure rates.

Between 1993 and 1996, the city had an average cure rate of 48.7%, a figure much lower than the 85% expected by the National Coordination of Sanitary Pneumology. That figure would hardly be attained, considering that the average death rate in those four years was 20%. It is important to say that out of 59 deaths in 1996, 76% were due to TB/HIV/Aids co infection.

Supervised treatment (ST) was employed as a strategy to change the epidemiological condition in the city. The implementation process started in 1997 and it has been incorporated into the routine activity of the Tuberculosis Control Program.

1.3. Implementation of Supervised Treatment in the Tuberculosis control program actions in Ribeirão Preto

Designing the Proposal

Initially, meetings at the units where the Program was already underway were scheduled. All the professionals engaged in the Tuberculosis Control Program actions and teams from the Epidemiological Surveillance Division were asked to participate. The proposal was discussed and outlined in flexible parts in such a way that permitted their interaction and, thus a possibility of changes during the process.

At those meetings, epidemiologic indicators in the city and in the region within the Program coverage were discussed. Supervised treatment as a strategy was presented

and discussed, and a study about the needs (number of professionals and material resources available) was conducted. Professionals' Activities and responsibilities were redefined and criteria for patient inclusion in supervised treatment were established all in accordance with the reality of the service provider, diversity, and economical and social differences of the population assisted by each unit.

In order to implement ST, some actions were necessary, such as the purchase of a vehicle and products (staple foods, transportation ticket, and milk) and educational materials (flyers, posters, citation forms), which was done in partnership with the Secretary of Social Welfare.

It was also necessary to purchase a television, a VCR, an overhead projector, a slide projector, and a microcomputer to implement an information system. There were educational activities for the community, periodical supervision for the teams in the program; new cases and people in contact were called on at their house, and there were benefits for patients under treatment. The EPI TB information system was installed.

Carrying out the Proposal

The project started in September 1997 in a Reference Unit for Tuberculosis Treatment in the south of the city, and the following year it expanded into other units.

The Tuberculosis Control Program Municipal Coordination, noticing that the proposal was a little innovative for the members of the team, had frequent evaluation meetings in an attempt to find alternatives or solutions to the problems and/or difficulties that could spring up during the process.

Two more outpatient clinics were established in Ribeirão Preto to assist and to follow up the diagnosed cases, in compliance with the proposal of making health a district matter. With five assistance units, access to tuberculosis treatment in the five health districts in Ribeirão Preto was ensured. Those outpatient clinics assist patients and family within their coverage.

It is important to say that all available resources and activities were fundamental for improving the organization of assistance to tuberculosis patients. In the last five years, the offer of supervised treatment has increased in the routine services. In 1998, 20.3% of the patients were daily supervised at home. In 2004, therapeutic supervision reached 73.9% of the patients.

Initially, patients who presented higher risk of default such as alcoholics, drug users, HIV positive, defaulters in re treatment, and recurrences were priority. ST offer has reached other patients and all pulmonary cases.

1.4. Epidemiologic and operational information

In Ribeirão Preto, there was a cure rate decrease of 2.2% from 1993 to 1996 and from 1997 to 2003, there was an increase of 1% a year (*cf.* Graphs 1, 2, and 3).

From 1993 to 2003, default percentage decreased 1.84% a year and mortality rate increased 0.09% a year in the same period.

DOTS was implemented at the end of 1997, which could explain the increasing cure rates from that year on.

The decreasing tendency of default rates from 1993 shows that the local TCP is consolidated, culminating with the implementation of supervised treatment. Ribeirão Preto was the first city in Brazil to comply with the Ministry of Health's guidelines in relation to treatments supervision.

Strangely enough, a new event occurred in 2001 because there was a slight decrease in cure rates followed by an increase of default percentage.

Explanatory Hypotheses :

It is believed that three factors interfered with the rates of cure and default that year: the first one is administrative, the second is operational, and the third is epidemiologic.

Administrative: change of mayor.

The Tuberculosis Control Program Municipal coordination took on other activities like the management of actions in Hansen's disease and Adult Health (Elderly, High Blood Pressure, and Diabetes) Programs.

Operational:

In 1999 and 2000, the state coordination of the STD/AIDS program hired a health agent to perform supervised treatment of TB/HIV co infection patients, with its own resources. Considering that the city already had organized teams, that professional was relocated to the outpatient clinic linked to the Hospital das Clínicas

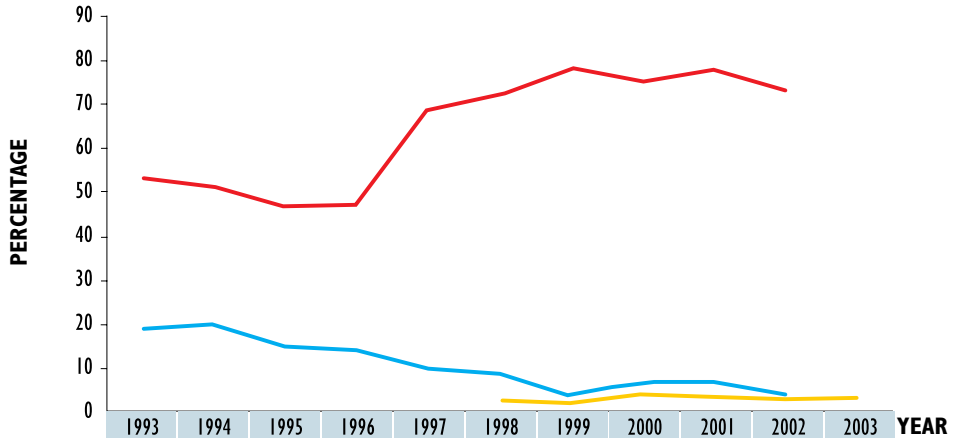
in Ribeirão Preto, to supervise cases under treatment in that institution. In 2001, that professional was dismissed and that interrupted the activities.

Epidemiologic:

In 2001, there was a high percentage of HIV related deaths, that is, during tuberculosis treatment, patients with TB/HIV co infection died. That fact interfered in the mortality rate in the city and contributed to the reduction of cure rates.

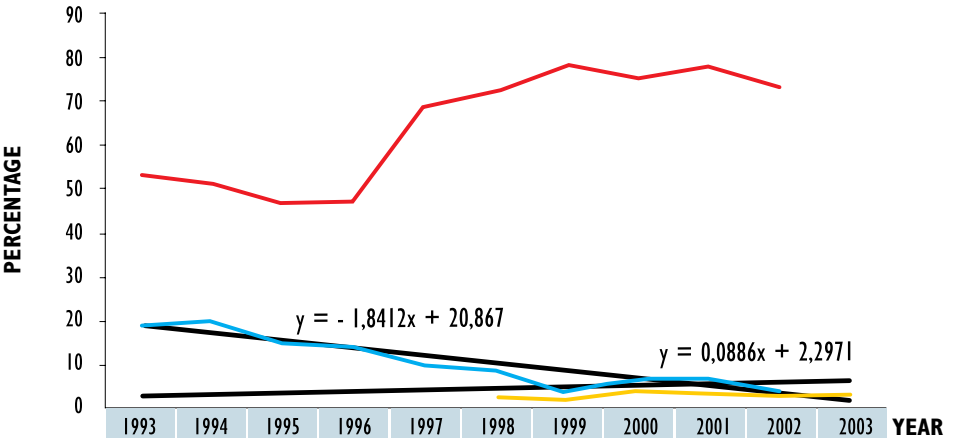
Percentage of treatment end due to death of notified tuberculosis cases in Ribeirão Preto, from 1993 to 2003.

GRAPH 1 - Percentage of cure, default and death – Ribeirão Preto, 1993 – 2003



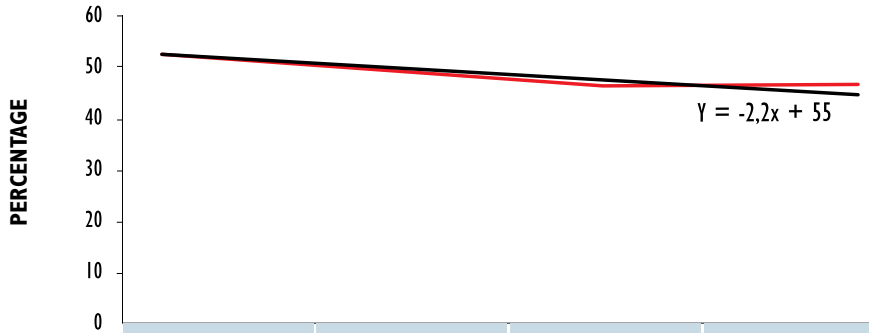
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
% cure	53	51	47	47	69	72	78	75	78	73	
% default	19	20	15	14	10	8,4	3,7	7	6,5	3,8	
% death						2,9	2,1	4	3,3	2,7	3,3

GRAPH 2 - Percentage of cure, default, and death – Ribeirão Preto, 1993 – 2003



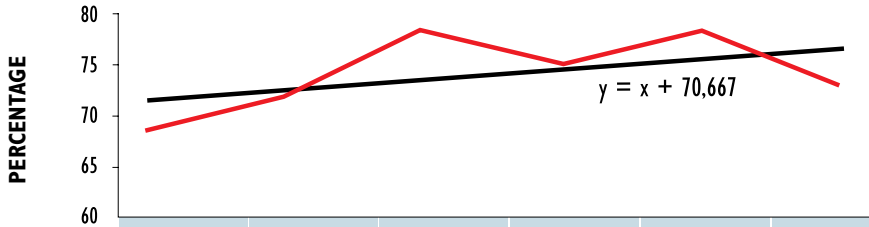
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
% cure	53	51	47	47	69	72	78	75	78	73	
% default	19	20	15	14	10	8,4	3,7	7	6,5	3,8	
% death						2,9	2,1	4	3,3	2,7	3,3
Linear (% default)											
Linear (% death)											

GRAPH 3 - Percentage of cure Ribeirão Preto, 1993 – 1996



	1993	1994	1995	1996	YEAR
% cure	53	51	47	47	
Linear (% cure)					

GRAPH 4 - Percentage of cure, Ribeirão Preto, 1997 - 2002



	1997	1998	1999	2000	2001	2002	YEAR
% cure	69	,72	78	75	78	73	
Linear (% cure)							

1.5.Final Considerations

In Ribeirão Preto, the implementation of supervised treatment for tuberculosis patients required a reevaluation of the assistance given until that moment. In that way, implementation, in spite of obstacles, was little by little able to change the attention to tuberculosis patients.

The basic principle of the proposal, characterized by the supervision of medicine intake, is still the ultimate objective of the intervention, because it aims to change indicators and consequently, epidemiological impact. Therefore, the implementation and operation of supervised treatment can modify the organization and structure of the work teams involved and makes intervention more frequent and diverse, both individually and collectively.

The implementation of supervised treatment helps to create new possibilities of work organization, because:

- it points to new work relationships by requiring the participation of different professional categories in only one work project;
- it demands a distribution of professionals' functions and roles, as a new organization of aspects related to distribution of human resources (shift and number of professionals), and work share;
- it stresses the importance of home visits in order to, at the beginning, collect data on patients' life conditions, priorities, difficulties, and, then decide whether to include the patient or not in supervised therapy;
- it permits establishment and expansion of internal routines, such as elaboration of a tool to register visits, control book and daily control of absentees;
- it makes a stronger interaction among staff possible by requiring frequent discussions about cases under treatment, as well as decisions previously made, and good inter department relations .

On the other hand, it is important to emphasize that the political and financial commitment of different governmental spheres and their complete support for the implementation of the proposal are fundamental. In part, the process was triggered in response to an established deal between Ribeirão Preto and the Ministry of Health. Thus, implementing measures that would meet a political and epidemiologic need

was a common interest. However, change of mayors can affect the actions of the program, requiring frequent negotiations by the municipal coordinator.

It is important to consider that the supervised treatment strategy's priority is the patient's cure. Practice, however, has shown that, as such action is performed, it is possible to promote other interventions, even though focusing the subject and his/her family only.

Daily visits to the patient's house make it possible to know the patient's reality, changing relationships and attitudes. That frequent contact permits the establishment of a bond, strengthening the professional's commitment to the patient. Consequently, it changes the quality of attention, leading to a stronger adherence to the treatment.

However, it is important to emphasize that the population's health is a result of certain structural socio environmental, political, and economical determinants. Therefore, health teams are not always able to respond to or find solutions to the identified problems. Sometimes, they depend on interventions that involve far-reaching relations, with the participation of other decisive spheres (political, economical, socio cultural). This way, it is necessary to make room for participation and create initiatives agreed upon by the society, cities, States and Federal Government.

One of the conclusions is that supervised treatment is an intervention that:

- represents a therapeutic action;
- is a way to reduce transmission through the control of the communicants by stressing family education actions;
- enables heath professionals to interact and perform better through the establishment a bound, reception and responsibility whose goal is to ensure better quality of attention and patient's adherence to the treatment.

2. DOTS IMPLEMENTATION IN SÃO JOSÉ DO RIO PRETO[6]

2.1. Background

São José do Rio Preto is in the northwest of São Paulo state; it is a regional center, head quarter of 8th Administrative Region, with 96 cities within its scope. It was founded on March 19th, 1852 and it has 406,827 inhabitants (SÃO PAULO, 2004); it is considered a big city and its influence extends to part of Minas Gerais , Goiás, Mato Grosso and Mato Grosso do Sul states.

According to the IPRS (Indice Paulista de Responsabilidade Social/ Social Responsibility Index-SP) in 2000 and 2002 (SÃO PAULO, 2004), São José do Rio Preto belonged to Network I in São Paulo state (elite network), with good levels of wealth, longevity and education. However, while there is one official São José do Rio Preto that is compared to the First World country cities, there is a real, illegal São José do Rio Preto that is represented by illegal land development (5% of the population have no ownership documents). These places have no schools, squares, or Health Services and people drink water contaminated by cesspools (SÃO JOSÉ DO RIO PRETO, 2005). The population of the city is similar to the populations in developed countries, with a decreased age group between 0 and 4, a significantly increased economically active population (14-49 years), 50 years old or more, and mainly older than 75 year olds (SÃO JOSÉ DO RIO PRETO, 2005).

An increased demand for equipment and community services, the construction of tenement houses for migrants, besides the changes in health policies in the country from the 80's on, led to a development and increase of public health services in São José do Rio Preto. The Banco Nacional de Habitação (BNH) in partnership with the Medium-sized Cities Program, which was created to soften the demographic situation of the big metropolitan centers, stimulated the construction of tenement houses.

São José do Rio Preto became a reference center for health services provision, and patients from several other states of Brazil seek for such services there. It has an average of 4.4 doctors for each thousand of inhabitants, twice as many as São Paulo state (SÃO JOSÉ DO RIO PRETO, 2005).

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[6] This subchapter was written by Silvia Helena Figueiredo Vendramini, Claudia Eli Gazetta, Maria Rita Cury,Tereza Cristina Scatena Villa, and António Ruffino Netto. It contains information extracted from Silvia Helena Figueiredo Vendramini's Doctoral Thesis, 2005: *"O programa de controle da tuberculose em São José do Rio Preto – SP: Do contexto epidemiológico à dimensão social."*

Since 1988, the implementation of the SUS has caused changes in the health system in São José do Rio Preto. In May 1988, it took on full management of Basic Attention (BRAZIL, 1997; SÃO JOSÉ DO RIO PRETO, 1999).

In 2001, reorganizing and restructuring the health system in the city marked the period. The city was divided into Health Districts and coverage areas that each health service would reach were defined. There were important investments in reformulating and expanding Epidemiologic Surveillance, which is computerized nowadays. Using the Geo processing Technology (SANTOS et al., *2004)* in order to provide tools for planning and assessing all actions, mainly those involving diseases needing compulsory notification, such as TB made services faster.

Before 1998, the State Secretary of Health coordinated assistance to tuberculosis (TB) patients and centralized it at the Health Center 1. With the municipalization of the state health services, the Tuberculosis Control Program (TCP) started assisting patients at the Assistance Management Center 60 (NGA 60) Regional Specialty Clinic (ARE). That Center has a secondary status in terms of specialty. The Emergency Tuberculosis Control Program, at that time, selected 230 priority cities and among them was São José do Rio Preto, because of the high rate of TB/HIV co infection that, between 1998 and 2004, varied between 35% and 51% (VENDRAMINI et al., 2005). In 1998, the implementation of Supervised Treatment (ST) initially targeted TB/HIV co infected patients.

The legislation in effect, the support of the State Secretary of Health (SES-SP), and the interest in receiving funds encouraged the Mayor to implement DOTS. A professional, hired through an agreement with the PAHO, conducted ST of co-infected patients at their home. From 2ooo on, the STD/AIDS Program took over of TB/HIV treatments at the Specialized Assistance Service (SAE), and the professional, who performed ST at the NGA 60, started to do that at the SAE.

In 2001, a health agent was hired by the State Secretary of Health (SES SP) with the financial support of the Ministry of Health to conduct ST with the NGA 60, mainly at patients' homes. In 2003, a nurse assistant was transferred from the Municipal Secretary of Hygiene and Health (SMSH) Epidemiologic Surveillance Center to the NGA 60, in order to offer ST to all patients.

At the beginning, ST was performed at the NGA 60, where the nurse observed medication intake. After the first health agent was hired, most cases of co infection started to be treated, in accordance with the TCP's directives: "observing medicine intake three times a week in the first two months and twice a week in the other four

months of treatment." In 2002, patients who had more risks of treatment default such as drug users, alcoholics, beggars, those excluded from the family, and co-infected patients were priority. Only after hiring a third agent, was ST offered to all patients that started treatment.

Several difficulties prevented ST from being administered equally to all patients, and among them were irregular availability of an ambulance of the Transportation Center, with frequent delays. That prevented the agents, who took turns conducting the daily activities, from observing medicine intake by several patients scheduled during the routine. Besides, the drivers of the transportation center were not prepared and the people responsible for that center objected to choosing a driver whose profile was appropriate for the job. That made conducting the strategy more difficult, causing delays, and absence of scheduled ST agents, once the ambulance/transportation service did not operate regularly, either because there were no drivers or because there were other priorities.

At the end of 2002, in order to try to promote ST, donation of staple foods, eggs, and vegetables was introduced, and transportation ticket provision to patients was maintained.

Another strategy employed during ST implementation was the establishment of a closer connection between the TCP team and UBSs managers, who began sharing information about the disease control actions in the city in order to start decentralizing ST to the UBSs.

Patients under ST were relocated to areas covered by each Health Unit and it was suggested that the teams receive patients and supervise medicine intake. At that moment, that initiative was not accepted and, despite the difficulties, the TCP group noticed that it was necessary to re organize the program and continue to make the teams at those Health Units aware of the problem. Thus, they firstly tried to decentralize ST, because a total decentralization of the whole program was a risk for its sustainability, which could lead to a loss of quality.

During the ST decentralization process, the "awareness raising" job had a remarkable influence in the Basic Training in Tuberculosis Epidemiologic Surveillance (TBVE TB) offered to technicians of the basic network (doctors, nurses and assistants/ nursing technicians). Since then, some UBSs, represented mainly by the nurse, stuck with the proposal, and started ST for patients in their region.

The incorporation of the TCP in Family Health Teams (ESF) was important for the re organization of the program in the city because of the strategy's own

characteristics. COP Agents already supervised patients at their homes and treatment and follow-up was offered at the NGA 60. From 2001 on, active search, diagnosis, treatment, and ST were decentralized due to an increase of ESFs and the qualification programs through the TBVE TB.

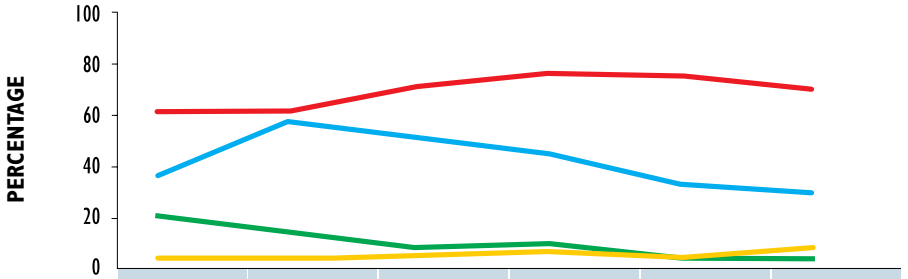
At the end of 2004, after the TCP Coordination presented the situation of the disease in the city in a technical meeting, TB gained priority status in Health Surveillance. Goals were set and it was decided that the decentralization of the program should occur gradually, as cases occurred within the Health Units coverage area. The TCP network should supervise ST performed at the Units, monitor the decentralization process, and hire the medical professional, whose profile was appropriate to take on treatment and actions for patient control.

2.2 Results

A study by VENDRAMINI et al. (2005) conducted in São José do Rio Preto evaluated TB incidence rates from 1985 to 2003 comparing the city with Brazil and São Paulo state. That comparison showed that, in 1985, the risk of TB infection was higher in Brazil than in São Paulo state, but in 2003, those rates decreased, reaching similar values for both. The population of São José do Rio Preto had steady rates during the evaluated period, showing lower risk of TB compared with the other two levels. The same study showed that the risk of getting TB was nearly three times as high among the population from areas with worse socio economical conditions as among people from areas with better standards of living.

Graph I shows the percentage of cure, death, default, and case detection in São José do Rio Preto from 1998 to 2003. In 2004, many cases were still under treatment when the data were being collected, so that year was not included in the study.

GRAPH 1 - Percentage of cure, death, default and detection of new pulmonary Tuberculosis cases. São José do Rio Preto, 1998 – 2003.



	1998	1998	2000	2001	2002	2003	YEAR
% default	18,7	18,7	5,5	7,6	2,1	1,5	
% cure	61,06	61,06	71,55	76,23	75,49	69,85	
% death	2,1	2,1	2,7	4,5	2,1	6	
% detection	35	35	51	44	32	28	

The percentage of new cases of pulmonary TB with positive diagnostic sputum smear in relation to the percentage of default, cure, death, and detection from 1998 to 2003 shows lower rates of default and case detection and higher rates of cure and death.

DOTS implementation in the city in that period had a positive impact on cure and default rates. The Mayor showed a stronger political commitment during the implementation of the strategy, by hiring new health agents, offering specific training programs to professionals, and starting ST decentralization to the UBSs and the ESFs.

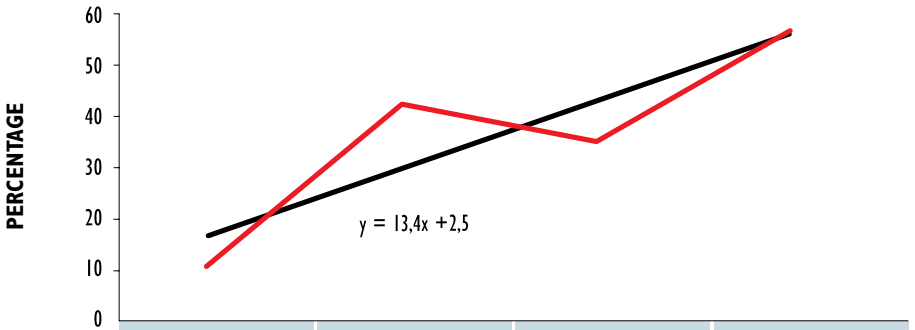
In relation to death, it was an increasing tendency during the six years studied. The results of evaluations in the SMSH (EPITB) database showed that one third of the deaths due to TB were among people over 50 years old, the other third of deaths were due to TB/HIV co infection, and the other third was linked to other diseases.

Those facts could be attributed both to demographic factors related to the aging of the population and the influence of HIV infection control programs. As the population gets older, many people, who first had an infection in the first decades of the 20th century, could become susceptible in their late fifties or sixties. Those people are not easily diagnosed because they present unusual clinical conditions, and that increases mortality rates among elderly people (MOTA *et al.*, 2003).

Other hypotheses could explain the data mentioned above, such as: 1) difficult access to health services, in spite of the availability of services in the Basic Attention network and the recent re organization its model. 2) Respiratory symptomatic individuals not noticed by health professionals. 3) The population's cultural habit of looking for urgency/emergency services at the first visit to the doctor, no matter how serious the case is. 4) And a hospital centered, hegemonic attention model that often causes spontaneous search for quaternary reference services (University Hospital), leading to late diagnoses and patients in precarious clinical conditions, facing the possibility of death (GAZETTA *et. al.,* 2003).

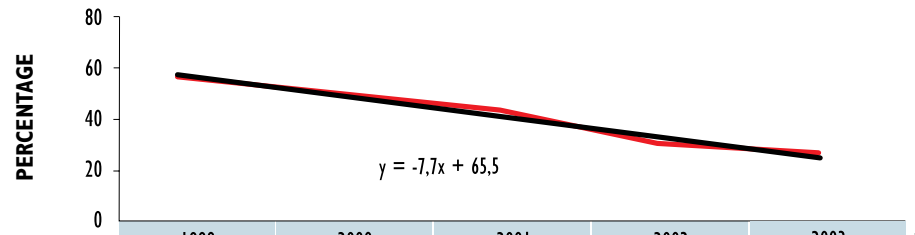
Case detection rates were analyzed in two different periods for a better understanding: from 1996 to 1999 and from 1999 to 2003, according to Graphs 2 and 3.

GRAPH 2 - Percentage of detection of new pulmonary Tuberculosis cases. São José do Rio Preto, 1996 – 1999



	1996	1997	1998	1999	YEAR
% detection	10	42	35	57	

GRAPH 3 - Percentage of detection of new pulmonary Tuberculosis cases. São José do Rio Preto, 1999 – 2003



	1999	2000	2001	2002	2003	YEAR
% detection	57	51	44	32	28	

In São José do Rio Preto, from 1996 to 1999, the regression line had a positive inclination varying from + 2.5% to +13.4% in case detection. That increase could have been a result of settling the poor and migratory population in tenement houses in 1995. The creation of new UBSs and ESFs facilitated access to health services, making case detection easier. Other reasons for that positive inclination could be the announcement of the TCP's strategy change and DOTS implementation, annual campaigns for RS active search and the municipalization of the health system, which had made the city fully in charge of the Municipal System in 1998.

The same increasing tendency in RS search in the city occurred nationwide from 1998 on, due to the implementation of new National Plan for Tuberculosis Control (PNCT).

From 1999 to 2003, the search for cases decreased 21%, when compared to the period from 1996 to 1999. That negative decline suggests that the priority of the Secretary of Health was fighting the Dengue fever, which since 1992 had been worrying sanitation and political authorities, in spite of the fact that the city had taken on full management of the Municipal System in 1998 and started re organization of health services.

In spite of the political will to implement DOTS, the TCP team remained centralized at the NGA, and it was possible to improve cure and default rates and consolidate ST. That possibly reinforced the idea of "tuberculosis as a disease to be treated at secondary levels," decreasing the active search for TB at UBSs starting operations.

Another hypothesis could be explained relating pulmonary (P) and extra pulmonary (E) tuberculosis forms – P/E – since pulmonary tuberculosis feeds the disease's transmission chain while extra pulmonary tuberculosis shows immunosuppression, caused mainly by TB/HIV co infection. If the P/E ratio increases because of the pulmonary form of the disease, it can be said that the disease has spread due to a lack of TB control. However, if the P/E ratio has decreased because of an increase of extra pulmonary tuberculosis cases, that could indicate a possible increase of immunosuppressant diseases, although pulmonary tuberculosis is also sensitive to the body's immunosuppressant conditions (TEIXEIRA, 2003).

The latter hypotheses corroborates data found in São José do Rio Preto, according to which the city has presented a decrease in P/E ratio because extra pulmonary cases have increased, probably due to a high TB/HIV co infection rate. Another explanation could be a more widespread use of appropriate technology by

the Program in investigative diagnosis, once the hospitals in the city diagnose most of the tuberculosis cases (SMSH,VE 2005)

Another fact, according to data from the municipal EPITB, is that pulmonary TB in the city has shown a decrease in the number of cases diagnosed through positive bacteriology (BAAR +), which could, epidemiologically speaking, suggest a decrease in transmission.

2.3. Final considerations

In São José do Rio Preto, DOTS served the purpose of re organizing the TCP that, from DOTS implementation on, has shown better cure and default indicators. That caused the decentralization of control actions in following up as many patients as possible and, along with that decentralization there has been a greater participation and integration of the Health Units with the TCP Team.

In addition to issues regarding the Mayor's political will and the reorganization of the services, the TCP coordination in the city thinks that besides supervising medicine intake, ST is also about welcoming the patient and his/her family and establishing a bond between them and the professionals on the team. Incentives and specific benefits such as food and transportation ticket, among others, as well as general directions about sick pay, unemployment insurance, and home visits permit a closer contact between health professionals and patients and their family. All of the above interventions improve results such as those found in São José do Rio Preto, promoting adherence to the treatment, reducing default cases, and increasing cure rates.

TB control issues, as far as macro management is concerned, requires a progressive improvement of living conditions of the population and show the need of implementing health policies targeting people who live in areas of higher TB risk in São José do Rio Preto in order to have better control over the problem in the city.

It is extremely necessary to adopt inter department measures aiming health promotion and surveillance; as the city has done in this Administration. Those measures should affect contributing factors in an organized way, not only monitoring cases, outbreaks, and communicants but also sticking with DOTS to eliminate low adherence to the treatment and the rise of resistant strains.

The Public Health System and the Administration are responsible for the success or for the failure of tuberculosis and the Government must make TB control a political priority and provide all necessary logistic and strategic conditions to reach the ultimate goal.

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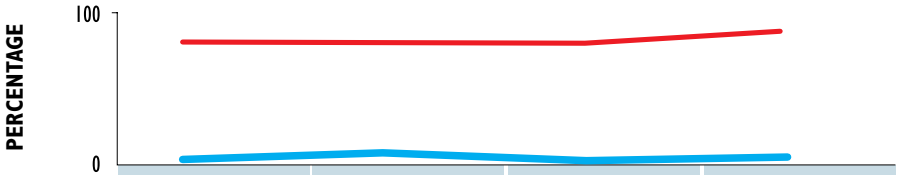
3. DATA FROM ITAPEVI

DOTS was implemented in 1998, however, we only have data from 2000 on. From 2000 to 2004, the data showed a slight increase of cure rates, followed by a decrease of default rates. The percentage of death showed a slight increase in 2002. One of the explanatory hypotheses may be HIV/TB co infection.

GRAPH 1 – Percentage of cure, default and death – Itapevi – from 2000 to 2003



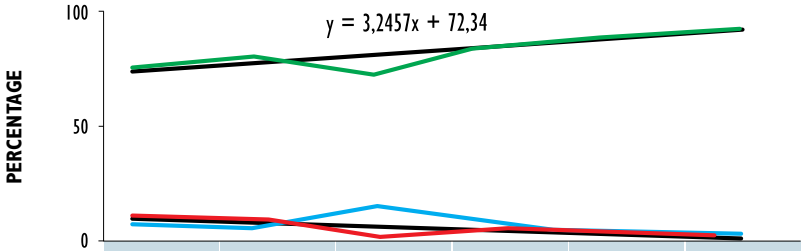
	2000	2001	2002	2003
% cure	84	83	82	94
% default	5	10	4	6

4. DATA FROM JACAREÍ

DOTS was implemented in 1999. From 1998 to 2003, there was an increase of cure rates followed by a decrease of default rates. It is important to point out that there was a slight decrease of cure rates followed by an increase of default rates in 2000.

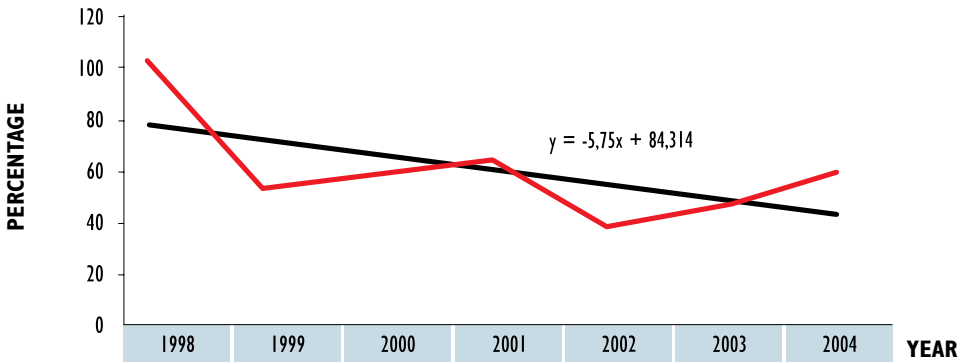
In this case, the same explanatory hypothesis is HIV/TB co infection.

GRAPH 1 – Percentage of cure, default, and death – Jacareí/SP – from 1998 to 2003



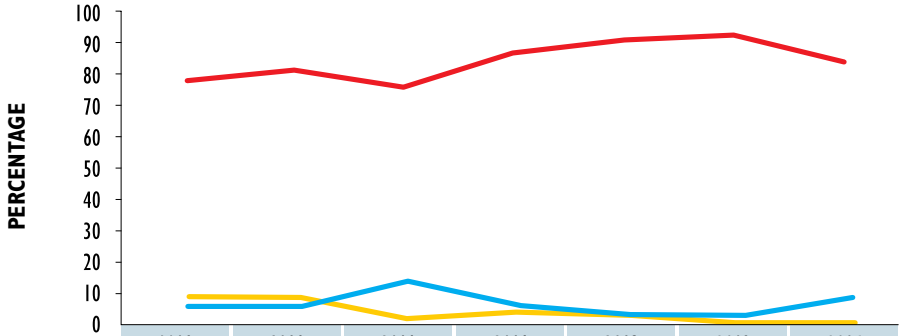
	1998	1999	2000	2001	2002	2003
% cure	77,1	81	75,5	86,2	90,0	92,1
% default	8,6	8,1	2,2	3,9	3,2	0
% death	5,7	5,4	13,3	5,9	3,2	2,6
Linear (% cure)						
Linear (% default)						

GRAPH 2 – Percentage of TB case detection in Jacareí – SP, from 1998 to 2004



	1998	1999	2000	2001	2002	2003	2004
% detection	103,2	54,3	58,8	65,5	39,9	47,6	60,5
Linear (% detection)							

GRAPH 3 – Percentage of cure, default, and death in Jacareí – SP, from 1998 to 2004



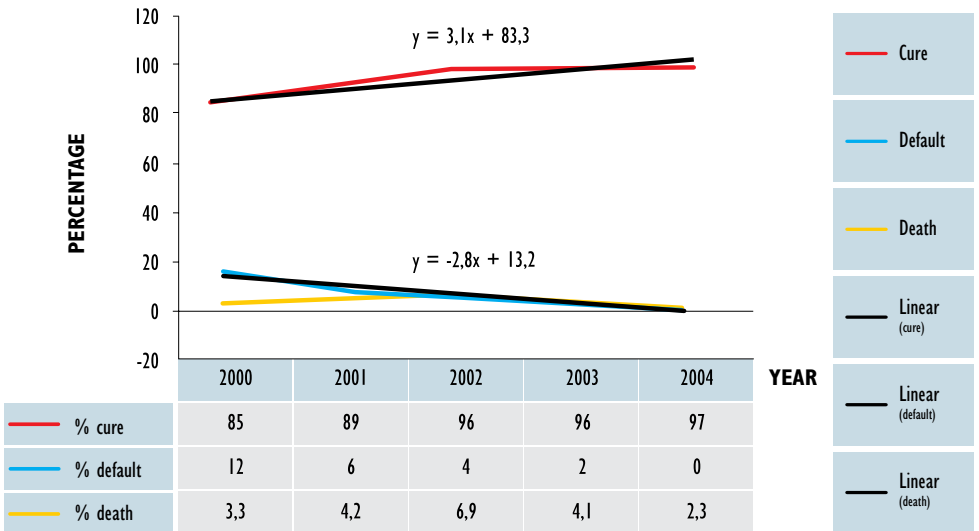
	1998	1999	2000	2001	2002	2003	2004
% cure	77,1	8,1	75,5	86,2	90,0	92,1	83,7
% default	8,6	8,1	2,2	3,9	3,2	0	0
% death	5,7	5,4	13,3	5,9	3,2	2,6	8,2

YEAR

5. DATA FROM EMBU

DOTS was implemented in 2000. Cure rates increased 3.1% a year and, simultaneously, default rates decreased 2.8% a year from 2000 to 2004. In 2001 and 2002, there was a slight increase of death rates.

GRAPH 1 – Percentage of cure, default, and death – Embu – from 2000 to 2004

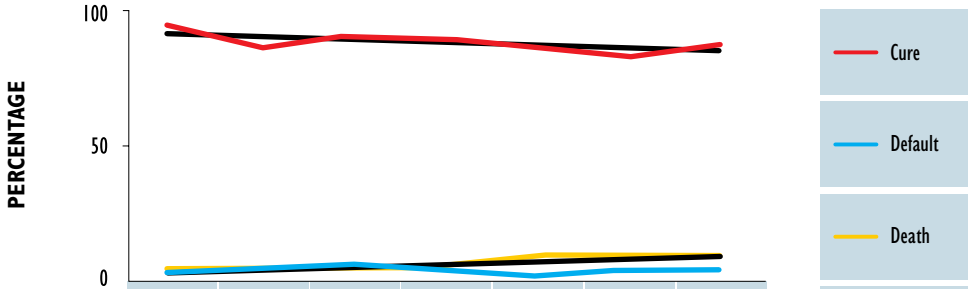


	2000	2001	2002	2003	2004
% cure	85	89	96	96	97
% default	12	6	4	2	0
% death	3,3	4,2	6,9	4,1	2,3

YEAR

6. DATA FROM SÃO BERNARDO DO CAMPO

GRAPH 1 – Percentage of cure, default and death – São Bernardo do Campo – SP, from 1998 to 2004



	1998	1999	2000	2001	2002	2003	2004
% cure	93,3	84,3	90,5	89,2	83,4	80,8	86
% default	2,9	3,9	5,9	2,4	1,8	3,6	3,6
% death	3,7	5,4	3,4	4,9	9,1	8,8	10,2

Some information about the priority cities in São Paulo state has not been presented because the data were not sent and/or because some data were incompatible (the main incompatibility was about the number of cures a year as being higher than the number of detected cases).

CHAPTER V

DOTS IMPLEMENTATION IN SIX CITIES IN THE STATE OF PARAIBA

This chapter will present:

- The TCP history in priority cities in Paraíba State;
- DOTS implementation in priority cities;
- Results of the strategy implementation in the cities.

This chapter was basically elaborated by Lenilde Duarte de Sá, Tânia Maria Ribeiro Monteiro Figueiredo, Dinalva Soares Lima, Marclineide Nóbrega de Andrade, Rodrigo Pinheiro de Queiroga, Maria Aparecida Alves Cardoso, Tereza Cristina Scatena Villa, Antonio Ruffino-Netto.

1. BACKGROUND

Paraíba State, according to data from IBGE/2001, has a territory of 56,584 Km that is 0.6% of the whole country and 3.6% of the Northeast region. In 2001, it had 3,439,344 inhabitants and 223 cities. Those cities are divided into 23 micro regions, four meso regions and 12 geo administrative regions (PARAIBA, 2001).

Paraíba state has been qualified for advanced management of the State System, a status approved by the Tripartite Inter administrative Commission (TIC), since April 26, 2001. That status was announced through the publication of the administrative directive No 763 of May 16, 2001 in accordance with the guidelines of the Unified Health System Basic Operational Norm (NOB/SUS 01/96) (PARAIBA, 2001). Nowadays, 100% of the cities in Paraíba are qualified for one kind of management, either in conformity with the Health Assistance Operational Norms NOAS/96 or in conformity with NOAS- 01/02 (VERAS, 2005).

The State Secretary of Health manages the SUS in Paraíba. Besides the central structure, Paraíba state has 12 regional health centers (NRS) that integrate all cities.

Among several other health problems that afflict the population, infectious diseases like tuberculosis (TB) stand out. From 1993 to 2001, there were 12,536 new reported cases; 1,696 were extra- pulmonary and 10,838 were pulmonary tuberculosis. In 2002, there were 81 deaths because of TB in the state. The most affected age group was 15 year olds. In 2001, the percentage of TB cases in the state was 48.8% (PARAIBA, 2002 *apud* OLIVEIRA, 2005).

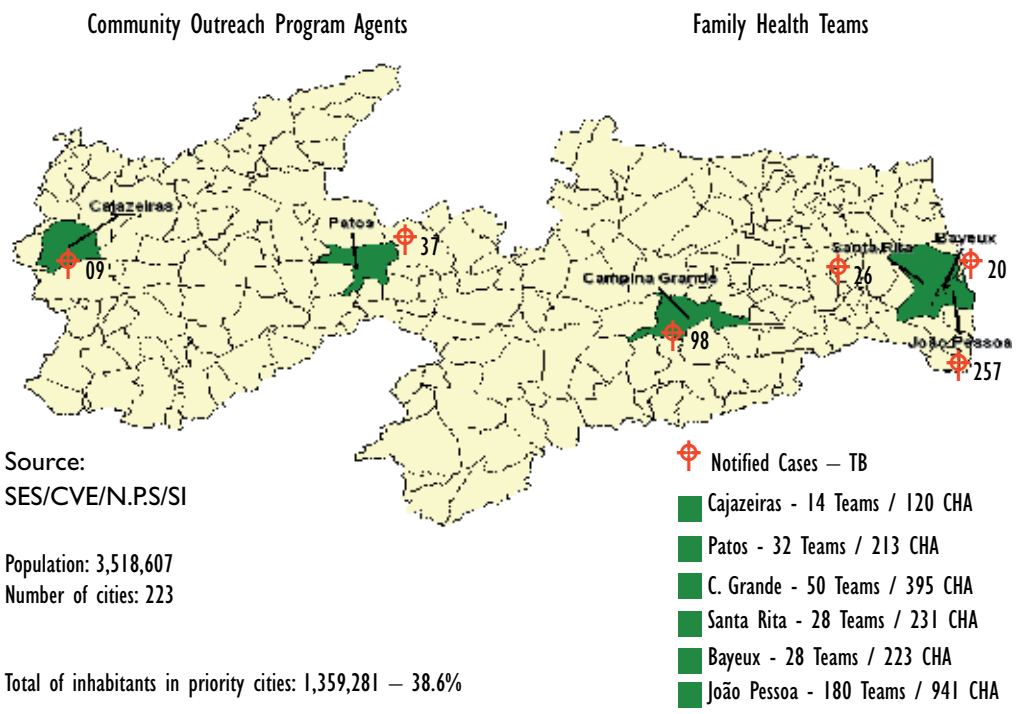
DOTS (Directly Observed Treatment, Short- Course) implementation was one of the measures employed to control TB. It is considered a postmodern strategy to control the disease (RAVIGLIONE, 2002). After DOTS implementation in the state in 1999, there have been changes in the indicators of TB epidemiological situation. Among other concurrent factors, those indicators seemed to be the result of the decentralization of the strategy to basic attention services and the incorporation of the strategy by the professionals who work in the Family Health Programs (PSF).

Since 2001, tuberculosis control actions nationwide have been guided by a technical, political, and social mobilization in order to achieve goals for disease control. Reaching those goals involve an improvement of epidemiologic surveillance and of the information system and expansion and qualification of the laboratory network. Furthermore, pharmaceutical assistance guaranteed by a decentralized dispensation of medication and supervision of inventory is mandatory. It will also be

necessary to qualify human resources, decentralize actions, and change the model of attention by re organizing services (RISI JUNIOR; NOGUEIRA, 2002).

Considering the importance and complexity of the five elements that make DOTS feasible, this chapter aimed to: (1) analyze the political aspects involving the strategy implementation and sustainability in six cities in Paraíba that nowadays are considered priority for tuberculosis control by the Ministry of Health (João Pessoa, Bayeux, Santa Rita, Campina Grande, Patos and Cajazeiras); (2) analyze TB operational epidemiologic situation before and after DOTS implementation in the mentioned cities.

TERRITORIAL LOCATION OF PARAÍBA STATE/PRIORITY CITIES – 2005



Political commitment refers to the Mayors' actions to provide all necessary resources to control tuberculosis, such as regular management of medicine supply and laboratory products in all service providers. The responsibility of Mayors and Health Secretaries for the effectiveness of tuberculosis control involves political and material support for the organization of the services according to the needs of tuberculosis

patients. They also must consider the decentralization of actions and services to the basic attention sphere and guarantee attention to patients by establishing assistance procedures in the full-assistance network (FRANCO; MAGALHÃES JR, 2003).

During its political history, Brazil has accumulated necessary elements so that the health decentralization process looks like a State reform with only neo liberal tendencies. The step-down of an authoritarian and bureaucratic regime was followed by the 1985 re democratization period, which was consolidated by the 1998 Constitution (MENDES, 1998). The Unified Health System (SUS-Brazil) was created through that Constitution and, complying with a democratic State, had the characteristics of a decentralized system in order to ensure people's right to health and for that, it should be ruled by the principles of integrality, universality, and equality.

The events that developed and contributed to the decentralization of health, especially in the 90's, and the unique characteristics of such decentralization in each region of the country, helped to dismantle any elaborate concept of *decentralization*. That is why the decentralization of health services is considered symbolic in Brazil, because it shows *degrees and forms of decentralization together with centralizing movements that form a mixture marked by historical and political circumstances* (MENDES, 1998).

Operational norms like NOB/91, NOB/93, NOB/96, and NOAS/SUS 01/2002 were legally designed in order to make the creation of SUS possible.

The NOB/91 established transfer of resources by the Union, making up ground on municipalization. The NOB SUS/93 institutionalized Tripartite and Bipartite Inter Administrative Commissions, creating a decision-making system shared with different administrative spheres and encouraging the municipalization of health services through the institution of three kinds of management: incipient, partial and semi total (MENDES, 2004).

The NOB/96 consolidated the policy of municipalization and offered guidelines so that cities took full responsibility for basic health services (full management of basic attention). In Paraíba, the cities complying with the directives proposed by the NOB/96 helped the State health policies to adapt to the conditions established by SUS's organic legislation and thus, create decision-making movements to decentralize health services and actions. (FRANÇA; ARAÚJO; CARVALHO, 2000). The NOAS/SUS 01/20002 tried to organize strategies that could change the focus of decentralization to municipalities to decentralization to Districts (MENDES, 2004).

In 1994, the Ministry of Health created the Family Health Program (PSF) within the structure of the decentralization policy in order to re organize basic attention

and guarantee that service providers were able to solve problems. Besides, health professionals would be able to establish bonds of commitment and responsibility with the population (SOUSA; FERNANDES; FERNANDES; ARAÚJO, 2000). Although the family health strategy already existed in Paraíba since 1994, from 1999 on actions for its expansion were intensified and goals and guidelines for 2000 were set (VERAS; RODRIGUES; CARVALHO, 2000).

Decentralization is stressed because DOTS implementation and expansion is linked to that process. Thus, the organization of the service system, focusing decentralization as an analytical category for the analysis of this study is vindicated. Therefore, it is important to present the historical aspects involving DOTS implementation in Paraíba. These, along with the information provided by the collaborators in this study will be shown in graphs.

In 1999, ten cities were selected and DOTS was implemented in Paraíba. After a first evaluation, it was possible to notice that cure rates had increased from 67.8 to 92% and default rates decreased from 16.6 to 2%. The results were decisive for the implementation of the strategy in another 20 cities (PARAIBA, 2001). Based on that statement, one can notice that DOTS implementation occurred in two stages, it is closely linked to the transfer of actions between levels as well as the health policy characteristics in the State, and the cities included in the decentralization process. As there is not any literature about DOTS in Paraíba, information about its history was available through the State Secretary of Health Administration /2001 report and the interview given by Dinalva Soares Lima. She has been working in TB control in Paraíba for 20 years and is the present coordinator of the State Secretary of Health Sanitary Pneumology Center (SES/PB).

In relation to the first stage, it is possible to notice that DOTS implementation occurred based on a decision made by the coordination of the State Health Secretary Sanitary Pneumology Center (SES/PB) due to a pilot project started in 1999. The Coordination of the National Program for Tuberculosis Control (NPTC) motivated that initiative. The national coordinator at that time, Dr. Antonio Ruffino Netto, showed interest in implementing DOTS in the other States of the country because he knew Dr. Ademir de Albuquerque Gomes's proposal. Dr Ademir had implemented DOTS in some cities of Central-West Region, such as Cuiabá and Campo Grande.

In Paraíba, the idea was presented to and discussed with the State Secretary of Health (SES/PB). At that time, the Secretary, who was involved with the re organization of basic attention, to comply with the decentralization process underway in other

States, adopted the Community Outreach Program (PACS) and the Family Health Program (PSF) as strategies. Knowing about DOTS project, the Secretary supported the Sanitary Pneumology Center and provided material and financial resources as well as technical personnel.

According to the guidelines offered by the NOB/96, the Secretary prioritized the TCP actions in the State. Any city that adopted a form of municipalization, however incipient, according to NOB/96 should include attention to tuberculosis patients.

That project was initially implemented gradually in 10 cities in Paraiba between July and December 1999. At that moment, those cities met the PAHO/WHO criteria, because their infrastructure was compatible with the implementation of the strategy and in accordance with its five elements. The cities were: João Pessoa, Bayeux, Santa Rita, Sapé, Campina Grande, Patos, Sousa, Pombal, Cajazeiras, and Monteiro.

The Central group visited the ten cities first, and DOTS was presented to the administrators (mayors and secretaries of health). Support for transportation of patients (vehicles and transportation ticket), additional medication, staples, and breakfast were negotiated. Supervised treatment (ST) was offered to patients over 15, with positive smear and/or relapse after cure and default. Fifty-four patients joined the strategy and local groups followed them for six months.

The state, regional, and local levels conducted an evaluation (cohort analysis) after six months. Out of the 54 cases followed, it was possible to notice 96.4% of cure, 1.8% of death, and 1.8% of default. The results showed the success of ST, which justified its expansion to another 20 cities in Paraíba.

The second stage of DOTS started in 2001 when its expansion was occurring along with the expansion of the Family Health Strategy. The State Secretary Sanitary Pneumology Center (SES/PB) designed a "letter of commitment" in order to establish an agreement between state and mayors for implementing TCP actions, decentralizing those actions to the PSF and PACS.

After DOTS expansion in the state, it was possible to notice changes in tuberculosis indicators. Paraíba state has 223 cities, and out of them, 164 (73.54%) have the Tuberculosis Control Program (TCP), which corresponds to 85% of coverage. The strategy, once decentralized to the Family Health Program (PSF), is conducted in 64 cities and 204 Family Health Units. That means that 30% of the population is covered by PSF /DOTS, and 62.5% of population in Paraíba is covered by DOTS (LIMA, 2005).

There is a lot to tell about DOTS implementation regarding the characteristics of each city. However, the priority cities- the ones where tuberculosis was the biggest public health burden- with more than 50,000 inhabitants and reference laboratory support, were selected for this study. That is why we are going to talk about the implementation of the strategy in João Pessoa, Bayeux, Santa Rita, Campina Grande, Patos, and Cajazeiras, mainly stressing political commitment for the implementation and sustainability of that strategy.

2. METHODOLOGY

This is a descriptive and analytical study with historical, operational, and epidemiologic data about DOTS implementation in six cities considered priority in Paraíba state by the National Program for Tuberculosis Control. The methodological (qualitative and quantitative) approaches for data collection and analysis followed the guidelines and instruments devised for the project TUBERCULOSIS: DOTS IMPLEMENTATION IN SOME REGIONS OF BRAZIL, BACKGROUND AND REGIONAL FEATURES, described in the first chapter of this book. It was necessary to add information about transfers in Appendix D and search some data that could identify variables related to assistance through supervised (DOTS) and non-supervised (NO DOTS) treatments because of our reality.

The former TCP coordinators and the present ones were interviewed to help this study. Three cities changed local TCP coordination and new mayors took over in January 2005. The new coordinators from Santa Rita and Bayeux could not answer the questions in Appendix A because they had just recently taken over the position.

The goal of the study was previously explained to the subjects/collaborators and they freely signed the consent form shown in Chapter I in this book, in accordance with Resolution No 196/96, which rules research involving human beings.

The Theme Content Analysis technique was used for data analysis and organization.

Political commitment was analyzed based on the following empirical categories: **transfer of responsibility for technical and managerial activities[1] and**

[1] Managerial Activities: information system, planning, staff training and qualifying programs, supervision/monitoring. Technical Activities: Notification, medicine dispensation, diagnosis and treatment, Supervised Treatment, ST complex cases, treatment follow-up of communicants, treatment, monitoring, and RS Search.

participation of key players. The first one is understood as the transfer of TB control activities to the most peripheral departments of the municipal health system; the second one is about the way mayors, coordinators, and local teams participated in making TB control actions possible.

The analysis of **transfer of responsibilities for** managerial and technical activities was based on the identification of the place where they would be developed, considering the initial and present moments of the strategy implementation.

Availability of resources; contact with other key elements of the health system; responsibility for the TCP, and promotion of Health Basic Attention actions (decentralization of actions and incorporation/privilege by municipal PSF/PACS groups) were considered in the **participation of the manager's category**. Negotiation with different levels (mayors, local teams, other governmental spheres, and community); possibility of decentralizing some TB control actions; the development of **strategies**[2] **to raise awareness and incorporate local responsibilities and promote TB actions**[3] and getting resources from other governmental departments were considered in the **participation of the municipal TCP coordinators**.

A quantitative approach was employed in order to reach the second goal, which was to evaluate the operational and epidemiologic situation of TB before and after DOTS implementation. Information from the Register Book and Tuberculosis Control/Black Book, collected through a specific tool (Appendix D) was used. Appropriate statistics was employed for data organization and analysis.

3. RESULTS

3.1. Qualitative aspects

3.1.1. Decentralization of technical and managerial TCP activities: transfer of responsibilities in priority cities in Paraíba State

When DOTS implementation started in the priority cities, the managerial (notification, information system, medicine dispensation, planning / treatment / monitoring / supervision) and technical activities (diagnosis, supervised treatment

[2] Strategies: Establishing bonds, creation of task forces, training programs, supervision, among others.
[3] Incorporation of TB actions into other programs and health teams.

and search for RS) were centralized. The TCP Coordination and/or the Reference Unit in each city performed all of them.

As DOTS reached more cities, some managerial activities remained centralized in some cities. In Campina Grande, information activities are centralized, so they are performed at the Reference Unit, although Family Health Units (FHUs) conduct DOTS. In João Pessoa, medicine dispensation takes place mainly at the Reference Unit. The professionals from Santa Rita go to João Pessoa to attend qualifying and training programs, etc. In Campina Grande, supervision of actions and Tuberculosis services are still centralized. Most of the managerial activities were decentralized and now Family Health Teams perform them too.

Diagnosis and treatment activities are still centralized because laboratory support has not expanded. Supervised Treatment was decentralized to Family Health Units in all priority cities, but João Pessoa. Family Health Teams have performed most of the search for respiratory symptomatic individuals, but in Campina Grande, the Reference Unit performs it too.

3.1.2. Participation of key players in DOTS implementation and decentralization in priority cities in Paraíba State

3.1.2.1. Participation of Mayors

According to TCP coordinators, the Mayors of priority cities supported the strategy, negotiated the use of resources and actions with other players, and they did their best to decentralize tuberculosis control actions.

> *"The Mayor totally supported us, we could count on him for whatever we needed about DOTS, and he was conscientious." (I4)*

> *"... People from the Ministry in agreement with the State Secretary of Health came, and the Mayor at that time, Dr. Paulo Cavalcanti agreed, he thought it was interesting, and the strategy was adopted in the city, here at Catolé Health Center." (I5)*

> *"First, he agreed on decentralization to health units, after that he accepted implementation very well. The Mayor did not obstruct the implementation." (I7)*

The Mayors supported the coordinators' actions, but they did not decentralize available resources to the TCP coordination.

> *"At the beginning (…) it wasn't so difficult because for every project that we started we had some money (…) I didn't know about funding, I didn't know! But every time that I tried to talk to him (the Mayor) about transportation ticket, we were always helped, I had his permission, I could go to the bakery and get whatever was necessary for the patients' breakfast." (I2)*

> *"At the beginning we had, let's say, some difficulties (…). It was the early beginning, but later there was a special attention in relation to the transportation ticket, you know. The food for the patients…" (I2)*

The Mayor's actions regarding the population's health are well defined in their importance by NOB 01/96. According to this norm, municipal Administrations are fully in charge of health attention (MENDES, 2004). In Paraíba from 1996 to 1999, in an attempt to comply with the operational norm mentioned above, the governor was committed to the development of strategic projects such as the municipalization of health actions and the reorganization of basic attention (FRANÇA; ARAÚJO; CARVALHO, 2000).

One of the main problems with SUS is related to financial resources or to their decentralization. It is known that the Mayor has the power to manage resources that target public policies (MERHY, 2003). However, many times Mayors act in a way that serves the interests of players involved with the local political scenario, which makes Health a currency to be used in political negotiations.

3.1.2.2. Participation of TCP coordinators

It is possible to notice from the coordinators' testimonials that they got involved with negotiation processes with players from different levels for DOTS implementation, worked for the decentralization of some tuberculosis control actions, and developed strategies to raise awareness and get local health services to incorporate responsibilities.

"Patos performed an activity with family, users, workers, health professionals, TB patients and family of TB patients …" (I6)

"The decentralization of DOTS to the 14 PSF groups was good for Cajazeiras and it helped the treatment a lot. The implementation of the book for RS search and hiring a new supervisor only for the program, made the implementation and coverage of the strategy stronger and better." (I7)

"We first made health agents aware and then, those from each PSF teams … (…). Then we delivered lectures…" (I4)

In the above testimonials, besides availability of material resources, one can notice that the coordinators' actions target strengthening responsibility, which is one of the goals of family health programs. That is, the mutual commitment between worker/user that is based on bonds. Such bonds of mutual responsibility must be different from protection and submission (FORTUNA; MATUMOTO; BISTAFA; MISHIMA, 2002).

3.1.2.3. Participation of teams in supervised treatment activities

As for the involvement of health teams with DOTS implementation, it is possible to observe the commitment of the professionals to make the strategy work, as well as some actions that, if not controlled, could make activities more difficult, especially the technical ones.

"…the team is the same, the Social Worker, the doctor, the nurse, all of whom were committed during the implementation. Since then, they have embraced the cause. They thought it was interesting to change the epidemiology of the disease and the risk of default, and they have worked on it until now... we have offered the same treatment, in the same way, and the team's conduct is the same." (I5)

"It was widely accepted by the health professionals. Everybody wanted to participate in the training program; everybody accepted and thought that it was one of the best things that had ever happened to the tuberculosis program" (I7)

"As I said at the beginning, it wasn't easy because the first idea was to make breakfast, but the schedule was a problem. That is why we established the other Strategy, which was the donation of staples and milk to the patients under DOTS. Moreover, we included the COP agent... The COP agent supervised the patients when they were taking medicine." (I4).

Along with DOTS implementation, its expansion occurred parallel to the expansion of the PSF. There were 44 PSF teams working in Paraíba at the end of 1998 and there were 72 at the end of 1999: an increase of 63.3% (FRANÇA; ARAÚJO; CARVALHO, 2000).

The participation of the professionals reveals actions focusing attention to TB patients, using a new way of conducting DOTS. As all new strategies, there was opposition and some actions to welcome the users. That type of reception is another guideline proposed by the family health program because it can make the professionals' actions more humane, trying to meet the needs of people and communities (SANTOS, 2004).

3.1.2.4 Strong and weak points of DOTS implementation and decentralization in priority cities in Paraíba State

The collaborators in this study mentioned the following points as strong ones in relation to DOTS implementation in priority cities in Paraíba: (a) the support offered by the Mayor to transport the patients and provide their food (breakfast, staples etc); (b) the participation of the Mayor considering political will and awareness, and (c) the commitment of the team regarding their "will" to implement and sustain the strategy.

"The political will and the team's will... because the work is not easy considering all the difficulties that we have... Tuberculosis work is not easy, it still is a marginal program, but the professionals' will is very big... the ones who work in this program and who accepted the strategy have been dealing with it until today" (I5)

Among the strong points, the coordinators point out that the decentralization of the actions to the cities and ST activities to Family Health Teams stands out.

"…With decentralization, there was a total commitment by the city. One example was the increased cure rate... the default rate decreased, the transfer rate decreased, and also the death rate decreased here in the city in relation to TB after DOTS." (I6)

"… where there is a family health program, it is easy... there is the health agent who visits the micro areas during the visitation period...he visits all those areas and he has only one patient... as far as I can remember, no more than five or six, patients at most for each team to treat." (I5)

The TCP coordinators pointed out the following weak points during the DOTS implementation process: (a) the centralized service at the beginning of supervised treatment, which made patients' access to the health service facility difficult; (b) opposition of the professionals from the reference units and from the ESF to the changes in schedule in order to meet specific needs of the patients under ST; (c) the Mayors' disbelief that tuberculosis still existed and their lack of knowledge about TB.

There is also a lack of skilled professionals to work with tuberculosis patients and provide them with appropriate care. Changes in Administration many times cause discontinuation of the actions, because the products necessary to the sustainability of the strategy are unavailable during transition periods. Another aspect that can harm DOTS development regards changing the coordinators and technical staff every time a new Mayor takes office. The lack of decentralization of laboratory support and unavailability of resources for the supervision of the activities for tuberculosis control are also considered weak points.

"… Tuberculosis is a problematic part of basic attention and PSF, because professionals working in these programs do not have proper qualifications for that kind of practice, for that kind of assistance. Therefore, that has also compromised our work in Tuberculosis control actions. So, I see in the professionals' profile... the training for controlling disease, which is still not very good. We know that there is a gap between the education received and the job... that dialogue isn't easy, it is difficult, we know that." (I2b)

"Laboratory support in Paraíba …LACEM laboratory stepped a little away of the first proposal of the Ministry. Its job was to perform exams for diseases that required compulsory notification, but it started to do clinical pathology too. So I think that from then on, some difficulties arose in relation to a steady support, to diagnosis, because there is only one LACEM in Paraíba, there are not 'LACENS' in the region. So, the list? What are the functions of LACEM nowadays in order provide support for diagnosis in the State? (…) It has to have staff to train, staff to do the reagents (…), to control de quality of the smears that are performed in the city… so that is very important for the laboratory (…) important in tuberculosis … to be equipped to be the support for diagnosis in the State." (I1)

"…there is always a big turnover of typists... you are trained, you are working hard. Then someone comes and says that you voted for the previous mayor and then you are out, you are fired from the city hall, then a person comes (…), so that is a big problem...a high turnover of human resources." (I1)

"…I think that the Program in Paraíba is doing fine, but it is necessary to have more financial support for supervision, because without that, I don't know any disease that can be dealt with properly without supervision... and we have been failing in this aspect... and we don't have financial resources to do it." (I1)

The problems mentioned here affect the element "political commitment" of the players involved in producing assistance in SUS, especially of those who deal with the challenge of controlling tuberculosis – whether in terms of managerial or technical activities. In regions where the population does not have quality of life and cannot accept the new, amplified concept of health, as it is noticed in several cities in Paraiba, the situation is worse.

The weak points mentioned above affect the development of attention to TB patients based on the concept/principle of integrality, because it fragments the production line of care. According to that point of view and based on FRANCO and MAGALHÃES JUNIOR (2003), attention should start at the basic attention service facilities (Basic Health Unit, Family Health Unit), followed by diagnostic and therapeutic support and by access to medicine, to specialized services and to other services, in a total care network. That way, the user's needs become the structural element of the health production process.

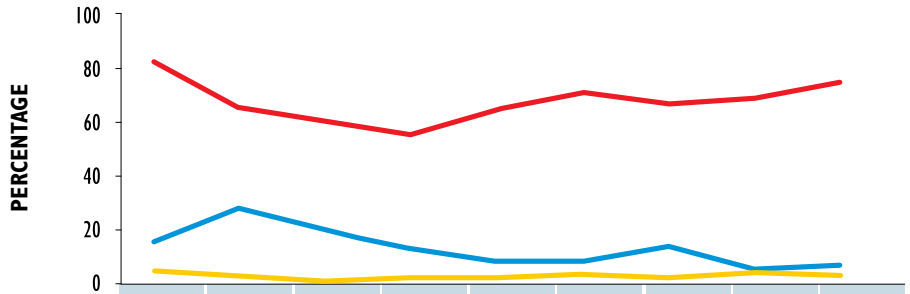
The mentioned weak points need more attention in order to address those issues and find solutions that target the community, with a greater participation of the players. The political commitment of the Mayors and other players involved with TB control should aim to make sure that the total care network operates in such a way that the TB patient's needs are met. It should also ensure qualification for the professionals, so that training will be consistent with the practice developed at the service facilities. According to NUNES (2005), nurses agree that the attention to TB patients is much more than simply taking medicine and point out the responsibility of the Mayors in creating and enforcing policies that target people's quality of life.

In spite of those problems, after DOTS implementation and expansion in the State, there have been some changes in tuberculosis indicators. Next, in accordance with the second goal of this study, the results showing TB epidemiologic behavior in six priority cities- João Pessoa, Bayeux, Santa Rita, Campina Grande, Patos and Cajazeiras- will be presented.

3.2. Results and analysis of quantitative data on tuberculosis epidemiologic characteristics in six priority cities in Paraíba State

The graphs below show the percentage of cure, default, and death from 1995 to 2003 in Paraíba State according to priority cities. The data from 1995 to 1997 are representative only for the city of João Pessoa. 1998 includes the cities of João Pessoa and Campina Grande, and in 1999, the city of Santa Rita is included. From 2000 on the data includes the six cities: João Pessoa, Bayeux, Santa Rita, Campina Grande, Patos and Cajazeiras.

GRAPH 1 – Percentage of cure, default, and death – Paraíba State / 1995 – 2003

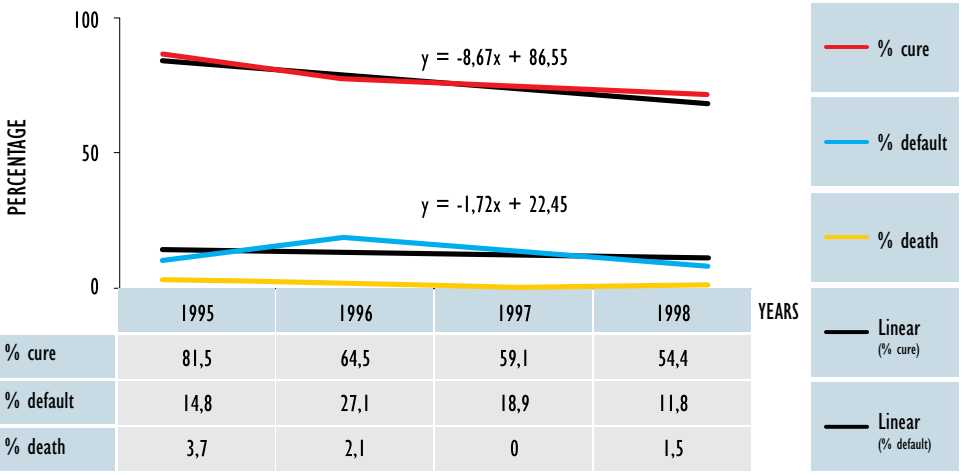


	1995	1996	1997	1998	1999	2000	2001	2002	2003
% cure	81,5	64,5	59,1	54,4	63,7	70	66,1	68,1	74
% default	14,8	27,1	18,9	11,8	7,6	7,2	13	4,7	5,8
% death	3,7	2,1	0	1,5	1,3	3	1,6	3,3	1,7

Source: Tuberculosis Control Register Book (Black Book)

There were different tendencies from 1995 to 1998 and from 1999 to 2003. Graph 2 shows that in the first period, the percentage of cure decreased 8.67% a year and the percentage of default simultaneously decreased 1.72% a year.

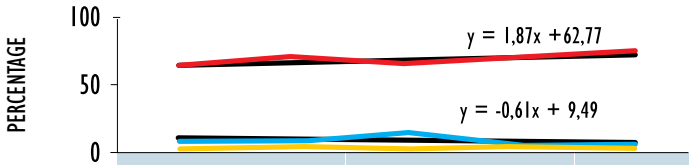
GRAPH 2 – Percentage of cure, default and death – Paraíba State / from 1995 to 1998



	1995	1996	1997	1998
% cure	81,5	64,5	59,1	54,4
% default	14,8	27,1	18,9	11,8
% death	3,7	2,1	0	1,5

Source: Tuberculosis Control Register Book (Black Book)

GRAPH 3 – Percentage of cure, default and death – Paraíba State / from 1999 to 2003



	1999	2000	2001	2002	2003
% cure	63,7	70	66,1	68,1	74
% default	7,6	7,2	13	4,7	5,8
% death	1,3	3	1,6	3,3	1,7

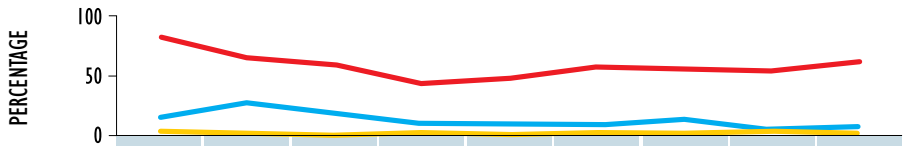
Source: Tuberculosis Control Register Book (Black Book)

THE PERCENTAGE OF CURE INCREASED 1.87% A YEAR; THE PERCENTAGE OF DEFAULT DECREASED 0.61% FROM 1999 TO 2003. THOSE DATA REINFORCE THE ACTIONS THAT ARE RESULTS OF THE MUNICIPALIZATION OF HEALTH SERVICES IN PARAÍBA (PARAÍBA, 2001) SIMULTANEOUSLY TO THE EXPANSION OF DOTS IMPLEMENTATION.

The information above refers to data from six priority cities, however, it is important to outline the different local realities that will be focused from the following data.

The data from the city of João Pessoa, from 1995 to 2003, show that there were two different stages: from 1995 to 1998, when the percentage of cure and default decreased, and from 1999 to 2003, when the percentage of cure increased and the percentage of default was still decreasing.

GRAPH 4 – Percentage of cure, default and death – João Pessoa – Paraíba / 1995 – 2003

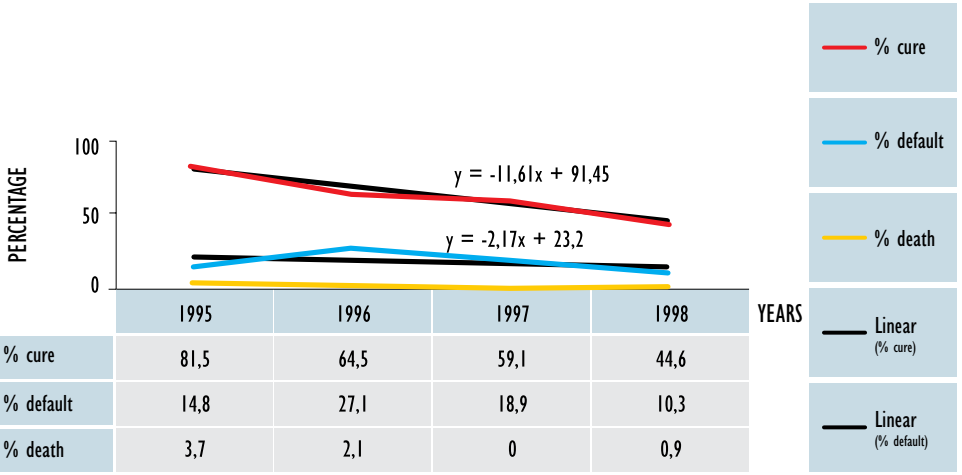


	1995	1996	1997	1998	1999	2000	2001	2002	2003
% cure	81,5	64,6	59,1	44,6	47,8	56,8	55,3	52,6	31,2
% default	14,8	27,1	18,9	10,3	8,4	8,9	13,9	5,1	6,4
% death	3,7	2,1	0	0,9	0,4	2	1,7	3,5	1

Source: Tuberculosis Control Register Book (Black Book)

From 1995 to 1998, the percentage of cure and default decreased 11.61% and 2.17% respectively, a year in João Pessoa.

GRAPH 5 – Percentage of cure, default and death - João Pessoa – Paraíba / 1995 – 1998



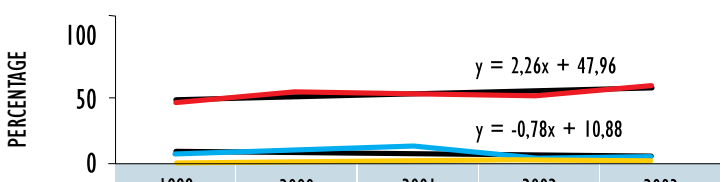
	1995	1996	1997	1998
% cure	81,5	64,5	59,1	44,6
% default	14,8	27,1	18,9	10,3
% death	3,7	2,1	0	0,9

Source: Tuberculosis Control Register Book (Black Book)

The graph shows that the percentage of cure increased 2.26% a year and the percentage of default decreased 0.78% year. One possible reason is that from 1999 on there was the decentralization of health and the municipalization of the services,

which improved the organization of basic attention. In relation to tuberculosis, the qualitative part of this study shows the transfer of actions to control the disease from the reference units to the Family Health Units.

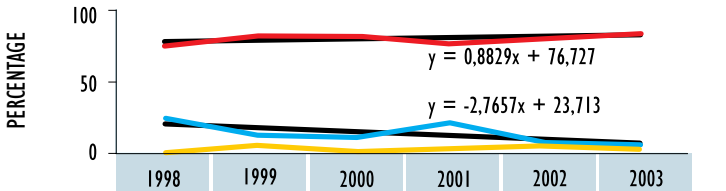
GRAPH 6 – Percentage of cure, default and death – João Pessoa – Paraíba – 1999 – 2003



	1999	2000	2001	2002	2003
% cure	47,8	56,8	55,3	52,6	61,2
% default	8,4	8,9	13,9	5,1	6,4
% death	0,4	2	1,7	3,5	1

Source: Tuberculosis Control Register Book (Black Book)

GRAPH 7 – Percentage of cure, default and death – Campina Grande – Paraíba – 1998 – 2003



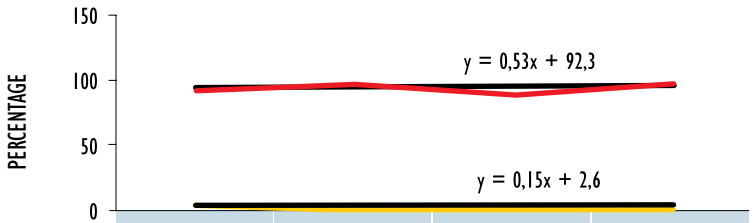
	1998	1999	2000	2001	2002	2003
% cure	75	82,1	81,6	76,6	80,4	83,2
% default	25	12,8	11,5	20,2	7,8	6,9
% death	0	5,1	1,1	2,1	5,9	3,1

Source: Tuberculosis Control Register Book (Black Book)

The percentage of cure increased in Campina Grande from 1998 to 2003, and the percentage of default decreased simultaneously. From 2001 on, the percentage of cure increased and the percentage of default decreased because of some political administrative or epidemiologic event. That could be explained by an increase of Family Health Teams from 1998 on; in 1998, there were 12 FHTs and, at the end of 2003, there were 49 FHTs in Campina Grande (SANTOS, 2004). In 2002, André Luiz Bonifácio de Carvalho, sanitarian, took over the management of municipal health and he stood out for reorganizing the model of attention, once he made basic attention a priority, and mainly because he expanded the family health strategy.

The cities of Bayeux, Santa Rita, Patos, and Cajazeiras presented a similar epidemiologic situation in relation to tuberculosis. That is, the percentage of cure was high, higher than 90% on average. The data, as presented, coincided with DOTS implementation in those cities, showing that the percentage of cure was higher than the national average of 75%.

GRAPH 8 – Percentage of cure, default and death – Bayeux – Paraíba – 2000 – 2003

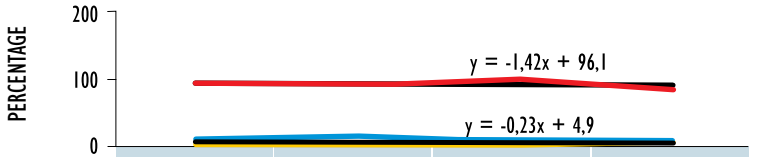


	2000	2001	2002	2003
% cure	92,3	96,8	88,6	96,8
% default	2,6	3,2	2,9	3,2
% death	5,1	0	0	0

Source: Tuberculosis Control Register Book (Black Book)

In Bayeux, from 2000 to 2003, the percentage of cure kept high and the percentage of default decreased, simultaneously. There was a similar situation in Patos. The percentage of cure increased and the percentage of default decreased in Cajazeiras and Santa Rita in the same period.

GRAPH 9 – Percentage of cure, default and death – Patos – Paraíba - 2000 – 2003



	2000	2001	2002	2003
% cure	93	91,7	100	85,5
% default	3,5	8,3	0	5,5
% death	1,7	0	0	5,5

Source: Tuberculosis Control Register Book (Black Book)

GRAPH 10 – Percentage of cure, default, and death – Cajazeiras – Paraíba – 2000 – 2003

	2000	2001	2002	2003
% cure	86,5	90,3	94,1	96,6
% default	0	0	0	3,4
% death	11,5	3,2	0	0

Source: Tuberculosis Control Register Book (Black Book)

DOTS was officially introduced in the country in 1999, and Paraíba adopted it in the same year, as a treatment strategy. It contributed significantly to change TB epidemiologic situation in Patos, Santa Rita, Bayeux, and Cajazeiras.

4. COMENTS

The experience in the six priority cities in Paraíba state shows that the concern about DOTS implementation brought about a decreasing default rate in general. Simultaneously, the cure rate increased coinciding with the reorganization of basic attention services, because of PSF expansion and the decentralization of the services at reference units to Family Health Units. That indicates a political commitment to DOTS implementation and expansion by Mayors, as well as PCT coordinators, and FHTs.

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CHAPTER VI

DOTS IMPLEMENTATION IN THE CITY OF RECIFE (2005)

This chapter will present:

- Characteristics of the city of Recife;
- Health service network;
- TB significance;
- DOTS implementation;
- TCP epidemiologic and operational information

This chapter was elaborated by Cinthia Midori Sassaki, Paula Hino, Maria Júlia Barros Vilela, Roxana Isabel Cardozo Gonzales, Tereza Cristina Scatena Villa and Antonio Ruffino-Netto. It is based on Cinthia Midori Sassaki's Doctoral Degree Thesis "DOTS status for tuberculosis control in Recife, PE"- Nursing in Public Health - post graduation course at Escola de Enfermagem in Ribeirão Preto, Universidade de São Paulo

1. CHARACTERISTICS OF THE CITY

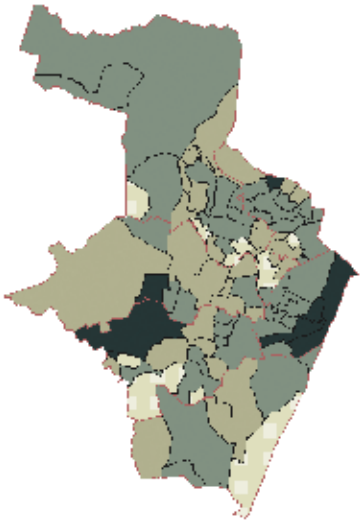
The characteristics of the city, TB epidemiologic status and the organization of the health system that assists TB patients in the city were briefly described in order to better understand DOTS implementation in Recife.

Recife has 209 km^2 and 1,422,905 inhabitants, most of whom are young women, according to the Demographic Census in 2000. Community living seems to be close, but there is a clear divide due to many huge social differences in the city. Therefore, a citizen who has average or high income lives no less than 1,050m far from a low-income community. Even within the neighborhoods, inequalities are present, especially in those regions where there are the worst indicators of morbi mortality and poverty. About 33.4% of the households have less than one minimum wage income or do not have any income at all, and about 70% of the population is considered poor. Education also presents wide gaps in the city (MUNICIPAL HEALTH PLAN – RECIFE, 2005).

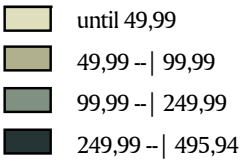
In such scenario, tuberculosis is a serious public health problem and Recife is one of the priority cities in Pernambuco State and the second city with the most tuberculosis cases in the Northeast of Brazil. In the state, there are 15 priority cities included in the National Program for Tuberculosis Control (PNCT) and, in 2003, the cure rate was 43.9% and the rate of TB/HIV co infection was 6.7% in those cities. (BRASIL, 2005).

Recife has an average incidence rate of 113.95/100,000 inhabitants, varying from 100 to 176.85/100,000 inhabitants in the Districts (SINAN/SMS, 2004). The high rate of mortality, 9.91/100,000 inhabitants, shows how serious this situation is (SIM/SMS, 2003). Default rate has been 15% and cure rate has been around 60% (CITY HALL OF RECIFE, 2005), while the Ministry of Health preconizes 5% and 85% respectively.

PICTURE 1 – Rate of Tuberculosis detection in the neighborhoods, Recife 2001 – 2004



Neighborhoods with worst Tuberculosis Case Detection Rate, in decreasing order:
Recife (DS I), Totó (DS V), Cidade Universitária (DS IV), Santo Antonio (DS I), COHAB (DS VI), São José (DS I) and Beberibe (DS II).



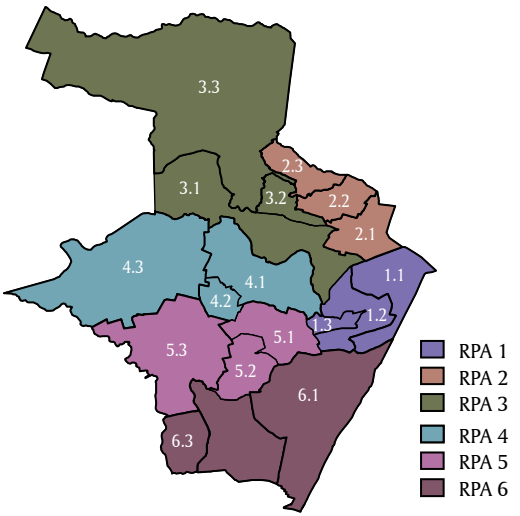
The VI Municipal Health Conference defined tuberculosis as a priority problem, but a re organization of the actions for controlling the disease was necessary, to change the indicators at a medium and long term. For that, Strategic Planning and Epidemiology were used to guide the process and design the Tuberculosis Municipal Plan 2004 – 2005, whose action lines are similar to the five elements of DOTS.

In the city, the organization of the health system to help tuberculosis patients has a referral service for instituonalization and most of the cases are detected at the hospitals through it. Around 30% of the cases are detected at emergency rooms in the general network, which shows that the tuberculosis patient comes to the hospital using a different service, and that delays diagnosis.

Tuberculosis assistance has been organized focusing Basic Care at outpatient units. The city has five traditional Health Units and 101 Family Health Units (213 teams) where social mobilization actions have been developed together with different players from micro territories (schools, groups, community radio, among others). The Reference network has also been organized, with eight policlinics in all districts. In each one of them, there is a specialist (pneumologist) and a multi discipline team that supports and offers continuing education (clinical meetings) to Basic Care Teams. Besides, each policlinic is a reference to diagnosis of pulmonary and extrapulmonary negative tuberculosis, with their respective counter reference, and follow-up of cases under treatment using Regimen III.

The city is divided into six political administrative regions (RPA) and each one is subdivided in three micro regions that join neighborhoods that have similar territories. In relation to health, each RPA is a Sanitary District (cf. Picture 2).

PICTURE 2 – Political Administrative Division of Recife



A qualitative study of three interviews with health professionals who deal with the Tuberculosis Control Program management and assistance in the city was performed in order to describe and understand DOTS implementation in Recife, using Theme Content Analysis.

The organization of the health service system focusing decentralization, guided the discussion.

Decentralization has been one of the most stressed organizational directives since the 1988 Federal Constitution. That directive has been employed in accordance with the infra constitutional legislation (1990 Health Organic Law) in the municipalization of health actions and services.

That kind of decentralization is called *devolution* and it is about the transfer of decision-making power from a governmental organization to an inferior and smaller one that will be self-governing. The success of that kind of decentralization is related to the level of regional and local management development (MENDES, 2001).

Nowadays, Recife is fully responsible for tuberculosis control actions. It has political and administrative autonomy to organize assistance according to the local reality.

The present context of health policy in the city, laboratory support and pharmaceutical assistance, information system and participation of the key players (mayors, coordinators and local teams) in making tuberculosis control actions possible, were key elements that supported the analysis of DOTS implementation in the city.

2. RESULTS

After reading the interviews, it was possible to understand that the DOTS implementation process in Recife is ingrained in the city's **health policy**, which complies with SUS principles and guidelines. It found its way through the expansion of the Family Health Program (PSF) and Community Outreach Program (PACS)[1] coverage. These programs serve as a gateway to the health system and, in the case of tuberculosis, as a guarantee of an effective diagnosis and treatment (BRAZIL, 2004).

TABLE 1 Number of Family Health Teams and Family Health Units in Recife, from 1999 to 2005

YEAR	1999	2000	2001	2002	2003	2004	2005
Family Health Teams	23	27	103	123	145	199	213
Family Health Units	14	16	58	69	75	97	101

Meetings were held in order to improve the professionals' qualifications and interaction with the different levels of complexity of tuberculosis assistance in the city, targeting total care.

> *"We had a huge expansion of the network…and as a consequence, we invested in human resources…"*

In relation to **laboratory support**, there was an expansion of its capacity to conduct bacteriology, as well as an appropriate quality control and bio security.

[1] Strategies that strengthen DOTS actions and that ensure an effective and increasing access to the diagnosis and treatment (BRAZIL, 2004).

Search for cases in the community was decentralized to PSF/PACS teams. The daily collection of sputum at some Health Units was organized; the results of the laboratory exams returned faster to Health Units; laboratory products were purchased and the Laboratory Information System was implemented (SIL TB), which processes data about each patient's exams, from diagnosis until cure.

> *"…in relation to the laboratory… we have been investing a lot in it…we have a laboratory that works well because of the quality control…"*

In relation to **pharmaceutical assistance**, there were meetings with health professionals in order to organize dispensation of individual doses of medicine along with the case notification. A table was introduced to help the monthly programming of medicine dispensation, and that transformed this department into an important data server to management and distribution of medication for the program.

The Information System of the city evaluates the quality of information. That is essential to know about the epidemiologic and operational profile of the disease, as well as to make decision and perform control actions. The **Information System**, regarding epidemiologic surveillance, also helped to keep track of notification forms filled out and the flow of those tools between the health units, Sanitary Districts and the Directorate of Epidemiology and Health Surveillance. For that, management support teams were hired and they visited Health Units with the Municipal TCP and Sanitary Districts Coordinators in order to assess the network and intervene. Those groups aimed to identify the structure of service facilities, evaluate the data produced by Health Units, check if the black book and general forms were being properly filled out, and verify the SINAN database.

The involvement of key players is another important aspect in the DOTS implementation process in Recife. The participation of the mayor was noticed from the moment the proposal was approved (Plano de Ação 2004 – 2005), by making resources available to TCP and contacting other key elements in the health system (Management Center, Municipal Health Council, Sanitary Districts, Coordinator of local TCP).

> *"…at the end of 2003 we had an important supporting plan …from the Ministry, called PAI (Action and Intensification Plan for TB actions)…the priority cities were chosen and we are one of them…"*

The involvement of the local TCP Coordination was noticed due to their specific skills to: 1) - create mechanisms to include tuberculosis control actions in health agendas by reporting how serious the disease was in the city. 2) - create and present an Action Plan to the Management Center. 3) - constantly negotiate with different levels (mayor, family health units teams, epidemiologic surveillance, pharmaceutical and laboratory assistance, community and other spheres of the government), and 4) - develop strategies to make teams aware and incorporate local responsibilities.

> *"…we, coordinators, have been working since the beginning of the plan and we discussed the political and institutional approval of this plan."*

> *"… we have already worked and are still working in social mobilization campaigns in different territories, micro territories; PACS and PSF teams participate in them… we have been involving the teams in discussions with the community…"*

As meetings, workshops, discussions, and evaluations with the Coordination take place, local teams (Health Units/PSF/PACS) participate more and more. However, the health teams/professionals have had some difficulties to incorporate local responsibilities for tuberculosis control, such as search for respiratory symptomatic individuals, laboratory exams flow, organization of supervised dose, and registration of data that have to be reported.

New findings show that the search for respiratory symptomatic individuals in the community and health services is ineffective and focused on spontaneous demand, which results in late diagnosis. Identifying and investigating contacts is ineffective too.

> *"…health professionals haven't included that daily practice in their search for symptomatic individuals…too many patients at the hospital network…"*

Although the city has an organized laboratory support, because of internal organization of the service, some difficulties exist for bacteriology to be carried out, as regards collection place and time to deliver the exams results.

> *"… in relation to the return of the results... many times laboratory results were delivered to the wrong section at the unit...it took time for the tuberculosis section to get hold of them...*

Some professionals did not systematically observe the therapeutic procedures, and the use of tools to follow the supervised dose was not efficient enough. That fact prevented a realistic evaluation of default and cure rates in the city.

> *"We are starting the supervised dose again…they (the professionals) did not take full responsibility for it... some of them did very well, some of them didn't…"*

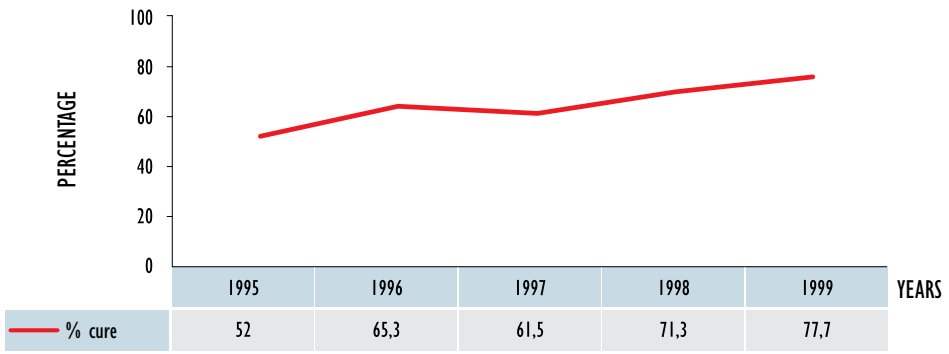
> *"…this model of supervised follow-up wasn't officially registered and, once it wasn't registered we couldn't evaluate results properly…"*

Another aspect that hinders the flow and quality of information and its appropriate use in planning Epidemiologic Surveillance actions and executing them is related to a lack of skilled human resources and material resources, especially computers.

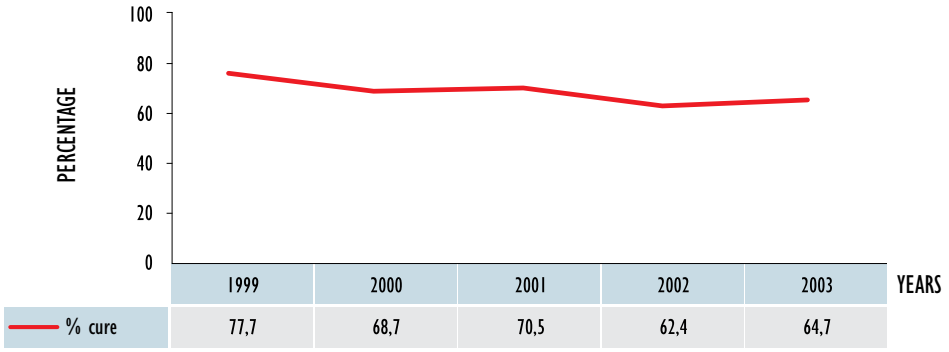
> *"…we have some difficulties…sometimes it is SINAN…sometimes staff members have trouble understanding how to fill out (the registers) in the correct way and in due time…some difficulties with surveillance in the city…generally only one professional is in charge of all the diseases..."*

3. TUBERCULOSIS EPIDEMIOLOGIC SITUATION AND ITS RELATION TO SOME HISTORICAL FACTS IN THE CITY

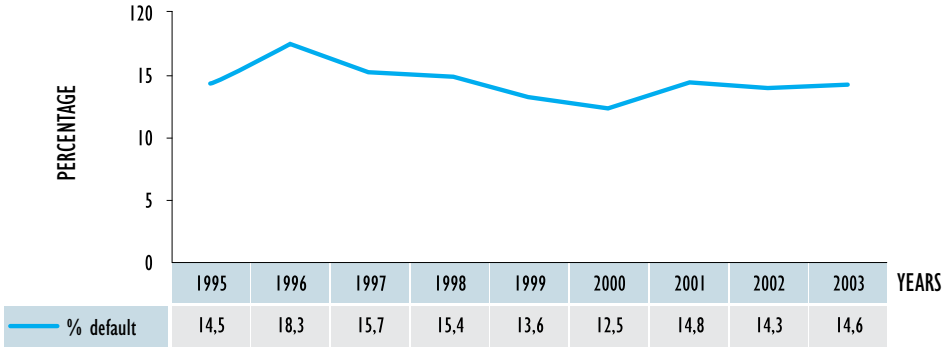
GRAPH 1 – Percentage of cure in Recife / 1995 – 1999



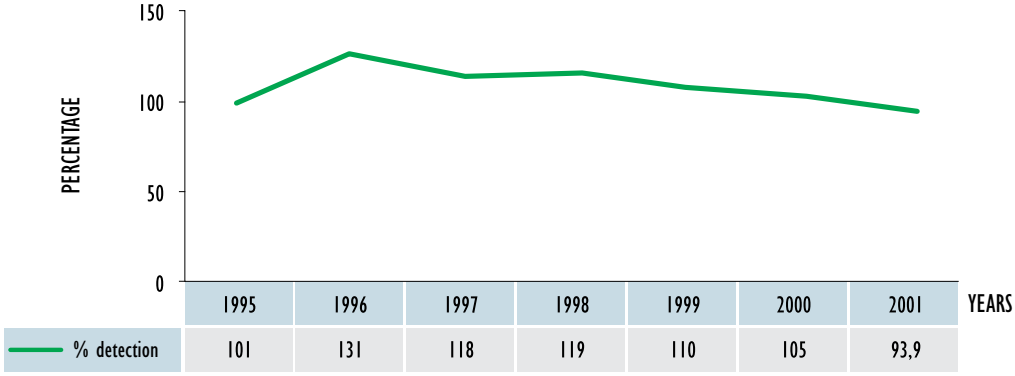
GRAPH 2 – Percentage of cure in Recife / 1999 – 2003



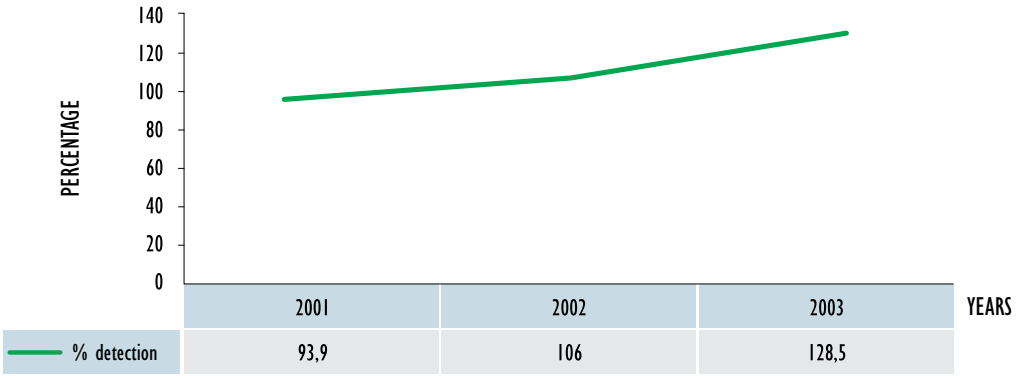
GRAPH 3 – Percentage of default in Recife / 1995 – 2003



GRAPH 4 – Percentage of case detection in Recife / 1995 – 2001



GRAPH 5 – Percentage of case detection in Recife / 2001 – 2003



From 1999 on, there was a decrease in cure rates (Graphs 1 and 2) and the percentage of default remained higher than 10% from 1995 to 2003 (Graph 3). Those data reflect (a) a lack of supervision/monitoring of tuberculosis control actions; (b) a high number of cases from surrounding cities; (c) little political support; (d) an absence of coordination teams; (e) a lack of human resources in the districts; (f) scarce financial resources; (g) unavailability of transportation to support the network; (h) poor diagnostic support (X Ray, laboratory); (i) permanent management turnover; and (j) the very decentralization process, all of which affected the local TCP.

The percentage of case detection-, in decline between 1995 and 2001, increased from 2001 on, because of a higher demand for health services, mainly in the last three years (Graph 4 and 5). From 1995 to 2003, the percentage of case detection was higher than the figure proposed by the PNCT - at least 70% of estimated tuberculosis cases. Those data may reflect a high number of cases not found previously. A late diagnosis means that a patient will go untreated for a longer time is, spreading the disease in the community.

4. FINAL CONSIDERATIONS

DOTS has been gradually implemented in Recife since the introduction of the 2004/ 2005 Municipal Plan for Tuberculosis, whose main lines of action are the same as the five elements of the strategy, targeting the decentralization of tuberculosis control actions to Basic Care services. That started in 2001[2].

The qualitative data show a new organization of TCP actions at health services leading to the decentralization of sputum collection, pharmaceutical and epidemiologic assistance integration, implementation of individual dose and social mobilization. However, the search for respiratory symptomatic individuals, the flow of laboratory exams, the way supervised dose is organized, and the quality of registers are still challenges for the municipal TCP coordination, because the participation of health professionals is still problematic.

Because of all those reasons, decentralization of tuberculosis control actions to PSF should be carried out cautiously, because it can lead to a pulverization of responsibility, a lack of commitment, a bigger difficulty in administering supervised dose, and inefficient keeping of registers.

Therefore, it is necessary that the TCP management keep on supervising and qualifying health teams, focusing their work place when evaluating progress of actions to control the disease and their own performance.

The quantitative data show that the percentage of case detection increased from 2001 to 2003. However, in face of the epidemiological situation, Recife needs to expand DOTS because it is a viable and efficient option to reach the goals proposed by the WHO.

5. COMENTS

The available information shows that DOTS implementation has been followed by a decrease of default rates. On the other hand, the percentage of cure has decreased since 1999. Which facts would lead to that trend? The percentage of case detection- in decline from 1995 to 2001 has increased fast since 2001. Certainly, there has been a re organization of health services, mainly in the last three years.

[2] For a gradual DOTS implementation, far-reaching partnership from 2004 to 2005 was established by the City with organized civil society (BEMFAM- Bem Estar Familiar no Brasil/ Family Wellbeing in Brazil), a State program, PNCT, and SBPT, supervised by the Brazilian Coalision against Tuberculosis, implemented under the auspices of USAID.

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Art. Science.

Antonio Ruffino Netto

Inside of everything equal
Suddenly, unaware
Not consciously looking for any thing
With art in such a way created
Unfettered an happy I was.

Inside of everything different
Conscious
I watched, sought and found
That was the same
I found the law that explains: science
Result: good or bad?
Fortunate or unfortunate?
It will depend on this revelation
How I use it or submit myself to it.

11 14 2001

CHAPTER VII

DOTS IMPLEMENTATION IN THE CITY OF RIO DE JANEIRO

"Rio de Janeiro, the Wonderful City".
Coelho Neto, 1908

This chapter will present:

- TCP background in Rio de Janeiro;
- The magnitude of TB problem;
- DOTS implementation in the city;
- Some preliminary results.

This chapter was elaborated by Maria de Lourdes Sperli Geraldes Santos, Roxana Isabel Cardozo Gonzales, Aline Aparecida Monroe, Tereza Cristina Scatena Villa, Elizabeth Cristina Coelho Soares, Marcus Barreto Conde, Antonio Ruffino-Netto

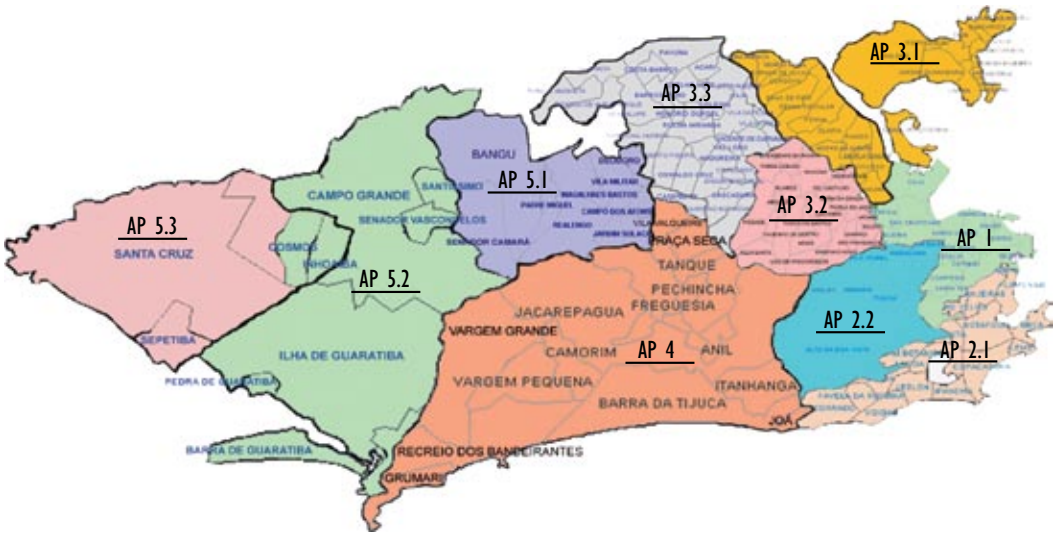
1. BACKGROUND AND THE SITUATION OF THE CITY

For better a understanding of the DOTS implementation process in Rio de Janeiro, a brief description of the city was necessary.

> The city of Rio de Janeiro is the capital of the state of Rio de Janeiro, located in the southeast of Brazil. It has 1, 255, 28 km^2 with 5,857,904 urban inhabitants. It is the second metropolis of the country, home to many migrants and, consequently it has poverty regions that are common in big cities. In 1993, In order to plan and offer health services and education, the SMS divided the city into 10 areas of planning (AP) (Picture 1), and each of them has managerial structure to promote local health actions - the so called Area of Planning Coordination (CAP). The APs have 32 Administrative Regions (RA) in their respective neighborhoods.

The model of municipalization of health in the city was different from the other Brazilian metropolises. The city of Rio de Janeiro was the capital of the country until 1960, so it has a large number of federal health units and as a result, its health system is strongly centered in hospitals. Its hospital network is the biggest in the country, with an unequal distribution of services and with more hospitals in the oldest parts of the city. This "hospital- centered" model is one of the factors that helps us to understand how difficult it is to address a disease such as tuberculosis (TB) in the city. A low offer of basic assistance per inhabitant a year is the principal deficiency in health assistance for the population, which hinders the users' access to the health system; therefore, they look for urgency/emergency services as a way to enter the hospital (RIO DE JANEIRO, 2002).

PICTURE 1 – Geographic map and areas of planning in the city of Rio de Janeiro



Source: City Hall of Rio de Janeiro

During the 90's, the city's responsibility for the management of health gradually increased. Because of investments, assistance coverage expanded and health indicators improved: for example, the rate of infant mortality decreased from 22.9 (in 1990) to 15.4 (in 2003) out of 100 children who were born alive. However, the reality still defies the city's administration: 18.7% of the people in the city live in subnormal areas[1] (14% in 1980 and 16% in 1991). The growth rate in those subnormal areas is 2.4% a year, and in the other areas of the city, it is only 0.38% a year. Urban violence, the principal result of social exclusion of part of the population, has an important role in the status of health in the city. In Rio de Janeiro, the external causes of death (homicide, traffic accident, suicide) are the first cause of death among people between 1 and 39 years old (RIO DE JANEIRO, 2002).

In this scenario, tuberculosis represents a serious public health problem in this city. In 1999, when tuberculosis was considered a priority by the SMS and taking advantage of a favorable political situation, DOTS implementation started, following the guidelines of the Brazilian Ministry of Health and the World Health Organization (BRAZIL, 1999; WHO, 1998; RUFFINO-NETTO, 2002).

[1] According to IBGE, a subnormal area is a group (shantytowns and the like) of residence units (shanties, houses etc.) that occupies property belonging to a third party (private or public), disorganized and dense, most of them in need of essential public services (RIO DE JANEIRO, 2002).

A study based on interviews with health professionals in both the management and assistance of the Tuberculosis Control Program in the city was conducted in order to describe and understand DOTS implementation in the city of Rio de Janeiro.

2. THEORETICAL REFERENCE

Data discussion was based on Health Surveillance, focusing territorial division. Political commitment, the participation of key players, and the decentralization of health services were considered the principal elements for data analysis. After painstaking reading of the interviews, using the Theme Content Analysis technique (MINAYO, 1993), it was possible to notice that the Organization of Health Services during DOTS implementation in Rio de Janeiro focused on territory occupation. Territorial occupation involves the recognition of a geographic area, the epidemiologic situation and living conditions of the population who lives in a certain specific time and place, presenting a typical demographic, social, economic, cultural, and political profile (MENDES, 1993).

Several departments of SUS have incorporated territory division as a strategy of organizing work procedures and health practices, for example, by the Strategy of Family Health and by the Environmental Surveillance in Health, among others. That practice makes it possible to identify health problems and design intervention proposals based on local reality (MENDES, 1993; 1999)

It is important to highlight that understanding and occupying a territory is the starting point for Health Surveillance, considered a sanitary practice that represents a new kind of organized social response to health problems in general, because it can identify, describe, and explain the existing problems, (MENDES, 1999; MONKEN & BARCELLOS, 2005). After identifying the critical issues that involve a certain community as well as available resources and needs of that community, actions must be planned, implemented, and continuously evaluated. That way, such actions will focus the local reality and be effective (MENDES, 1993; 1999).

Territory occupation and the identification of the epidemiologic situation in Rio de Janeiro by the TCP team effectively contributed to the organization of health services in order to implement DOTS, guiding the process.

"…we chose some areas for epidemiologic reasons, others for operational problems due to infrastructure, or because the geographic area was bigger, with few health units or because they had higher incidence rate…"

Urban **violence** was identified as a critical problem for health surveillance in the city. It has interfered with DOTS implementation, disturbing activities related to TB control, such as home visits to administer medication, search for absentees, and evaluate contacts. More and more people who visit patients at home and search for absentees are threatened or prevented from performing their actions. Urban violence is a real barrier for the access of the population to health services and vice versa.

"Violence is a problem of the city…patients couldn't leave the shantytown and go to health units to take medicine…they were not allowed to come to and to leave it…"

According to the WHO, decentralization of health actions has been adopted as one of the strategies used in reforming the health sector all over the world in order to improve the efficacy of actions, equity, efficiency, and quality of health services (ORGANIZACION MUNDIAL DE LA SALUD, 2002).

The decentralization process in the city has occurred gradually because of the local characteristics and diversities and because of problems affecting communities, such as violence. At first DOTS was implemented in an area of planning used as a pilot, AP1. By occupying and identifying that territory, it was possible to detect that the tuberculosis epidemiologic situation should be the main criterion for the implementation of the strategy there. AP1 accounts for about 650 tuberculosis cases a year, which represents a rate of 240/100,000 per inhabitant, the highest incidence rate in the city (RIO DE JANEIRO, 2005b).

Following the same principle, that is, identification of health problems in a given territory, DOTS decentralization expanded to AP5. Therefore, the area was chosen not only because of epidemiological criteria- although the incidence rate of Tuberculosis cases was important, around 100 cases/100,000 inhabitants- but also because the area's demographic coverage was wide and it had few health service facilities (CAVALCANTE et al., 2003).

Later, a group of health professionals who participated in tuberculosis control actions with the coordination of the program implemented the strategy in a

Health Unit in a neighborhood in AP4 (Cidade de Deus). The model of DOT adopted until then was institutional supervision, in which the patient goes to the Health Unit to take medication. For that, food vouchers and transportation tickets are offered to the patients under supervised treatment, as a form of incentives.

It is important to highlight that DOTS expansion in Rio de Janeiro was conducted through continuous evaluation performed by the TCP coordination, presenting favorable results in relation to the epidemiologic indicators; however, the 85% of cure rate has not been reached yet (BRAZIL, 2004). In AP1 and AP5, the cure rate was 81.0% for new cases.

In spite of the good results in those first experiences, the cost of DOTS-food and transportation tickets provision- is a limiting factor for its expansion and sustainability. Besides that, the lack of human resources at low complexity health units makes the decentralization of TB control activities more difficult. Based on those problems, the TCP management team reorganized DOT assistance and adopted a "mixed model" of supervision. That model involves supervising medicine intake both at home and at the health unit.

That new kind of assistance started in 2002, when DOTS expanded to AP2, in the south of the city, where three Municipal Health Centers offered TB assistance. That area has a big socio economical diversity, with upper middle class neighborhoods and 14% of shantytown areas and illegal property occupation. It is second in TB incidence in the city (140 cases/100,000 inhabitants on average) and Rocinha, one of the most violent shantytowns in Latin America (CAVALCANTE et al., 2003), is located there and has rate of TB incidence(588/100,000 inhabitants) five times as high as the incidence in the whole city.

Violence and illegal property occupation have some influence on the high incidence rates of the disease in Rocinha, where the Community Outreach Program was created, targeting tuberculosis control. A group of 40 COP agents were selected in the community and hired to supervise treatment at home (op.cit). The COP in Rocinha in the beginning was only in charge of DOTS to control tuberculosis, although it was clear that after some time it would be necessary to expand its functions, adapting them to the directives of the Ministry of Health.

Employing that model made it possible to reach a cure rate of over 85% in Rocinha. In spite of its unique characteristics in relation to the size of territory, level of poverty and violence, and the political scenario, it is fair to assume that such alternative is effective to control tuberculosis in the city of Rio de Janeiro.

At the end of 2004, DOTS expanded to AP5.3, west of the city, which is located around 80 Km far from downtown. That area was selected because of the political context at that moment, when the mayor determined that it was a priority area for investments and for the expansion of the family health strategy. The TCP decided to follow the implementation of family health strategy and expand DOTS into the area employing this model of reorganization of basic care to conduct the actions for tuberculosis control. Nowadays, the expansion of the strategy implementation targets AP3.1.

Besides gradually implementing the strategy, new players were included to minimize some problems, such as violence, which make access to health services more difficult. Therefore, COP agents and residents from the community were hired to ensure the access to health services and the effectiveness of health surveillance.

> *"…the best way to enter those communities and fight tuberculosis was through the COP agents' work…we created the COP for tuberculosis."*

That experience has been positive, and the COP was incorporated following guidelines targeting the reorganization of basic care, although it was adapted to the local reality and the goals of the program.

> *"…there are strategies for adaptation…we hired a "visitor", a person who lived in the community and integrated the PSF because he had free access …"*

The COP agent has played an important role in tuberculosis control actions in the city of Rio de Janeiro, both because of his/her profile and because of skills in basic care.

The TCP management team in Rio de Janeiro mainly invested in two aspects in order to ensure the effectiveness of DOTS implementation: A) I**n qualifying staff,** both training and updating all professionals from the Health Units, COP ,and PSF teams involved in TB control, providing workers and patients with educational material about DOTS, created by the coordination team. B) In **supervising/monitoring,** keeping a close relationship with the local level and establishing a good supervision and control of the cases.

In relation to DOTS sustainability in the city, it is important to emphasize the involvement of the TCP Coordination team, the Mayor, the local team, and the community in TB control actions and the implementation of the strategy.

The coordination team's ability to obtain resources, through sources such as the Ministry of Health and through international projects linked to institutions like the University Johns Hopkins/Baltimore/U.S.A., USAID, and National Institutes of Health (NIH U.S.A.) was important for DOTS implementation.

"…we got financial aid from USAID and the Ministry of Health…"

Because of the temporary and limited nature of the external contracts, the team needed to negotiate with the mayor in order to ensure the sustainability of DOTS actions, such as hiring COP agents continuously. All projects financed by external sources were designed in such a way that the city Administration could take them on later, and that would ensure the strategy's sustainability.

"…the first step was to present the project to the health coordinator…we depend on external funds and they expire... Fortunately, we could have the Administration finance all COP agents …"

The mayor's involvement has been essential, once the Administration has accepted the strategy and taken responsibility for financing human resources and other actions.

"…the mayor accepted the idea and kept on investing in it... He started financing the COP agents and the transportation ticket for the patients…"

Another effective measure was the partnership with the community, using its resources.

"… it was an interesting partnership with a big church…they offered the place for free…we renovated it, we did everything…"

It is possible to notice facilitating factors in DOTS implementation, such as hiring COP agents in specific areas for TB actions. The availability of incentives,

the ability of creating projects to get resources easily, identification of TB status and the territory, and information feedback are key factors to improve the quality of the registers and to motivate local participation.

Therefore, it was possible to identify factors that make the process more difficult such as the lack of human resources that are necessary for supervision as well as the development of TB control actions.

> *"…in the management department there are few people to supervise…we work with the minimum number of people… sometimes fewer than the minimum …we don't have a human resources policy."*

3. TCP EPIDEMIOLOGIC AND OPERATIONAL INFORMATION

DOTS was implemented in the city of Rio de Janeiro in 1999. The percentage of cure can be described in two periods: 1997/1999 and 2000/2003 (Pictures 2 and 3).

From 1997 to 1999, the percentage of cure was decreasing 0.45% a year and the percentage of default was decreasing 1.2% a year as well. From 2000 to 2003, the percentage of cure increased 1.59% a year and the percentage of default decreased 0.3% a year.

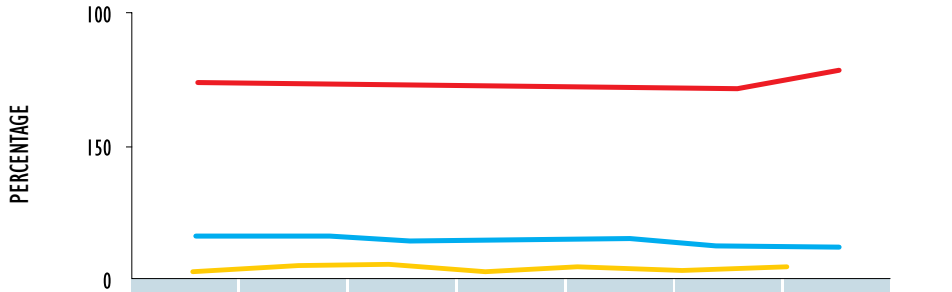
The percentage of death kept on growing 0.08% a year from 1997 to 2003.

In 2001, the percentage of cure decreased (it was the lowest rate throughout the studied period) and, simultaneously, the percentage of default increased to 14.4%. Which epidemiologic/administrative factors could have occurred?

In 1999, the strategy was implemented in only two APs. From 1999 to 2001, considering the epidemiologic indicators from only those two areas, the rate of cure was 83% the rate of default was 8%, and the rate of death was 3% (CAVALCANTE et al., 2003).

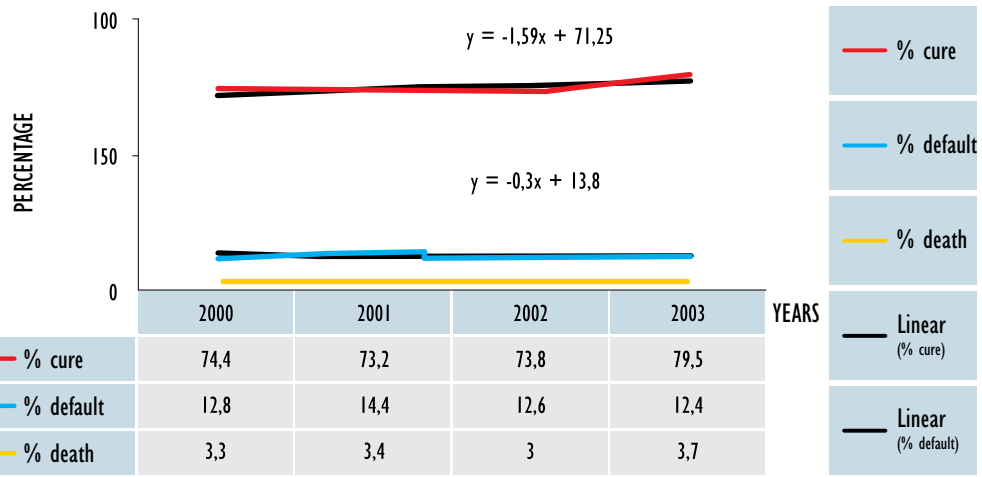
From 2000 to 2002, TB situation got worse in the city because of serious political problems that affected the TCP in Rio de Janeiro. In 2003, the percentage of cure increased (79.5%) because of DOTS expansion in Rocinha, one of the shantytowns, where the number of TB cases is very high.

GRAPH 1 – Percentage of cure, default, and death in the city of Rio de Janeiro, between 1997 and 2003.



	1997	1998	1999	2000	2001	2002	2003
% cure	76,1	74,7	75,2	74,4	73,2	73,8	79,5
% default	16,2	15,4	13,8	12,8	14,4	12,6	12,4
% death	2,6	3,6	3,4	3,3	3,4	3	3,7

GRAPH 2 – Percentage of cure, default, and death in the city of Rio de Janeiro, between 1997 and 2003.



	2000	2001	2002	2003
% cure	74,4	73,2	73,8	79,5
% default	12,8	14,4	12,6	12,4
% death	3,3	3,4	3	3,7

4. FINAL CONSIDERATIONS

DOTS is implemented in most of Rio de Janeiro city (36% of the population is covered by DOTS). The implementation and expansion have been performed gradually, based on recognition of territory as a tool for planning and evaluating health actions in order to control tuberculosis.

Some areas are considered priority, regarding service expansion, in an attempt to soften the problems of the city. The PSF, known as "health where you live," in Rio de Janeiro, was adopted by TCP as the principal tool for DOTS expansion.

In general, TB control Programs are vulnerable to some factors such as the size of the city, level of poverty, level of violence, and also the present political situation

Six years after DOTS implementation, there has been an agreement at TCP that a single, formatted, and "ready-to-use" model of DOTS cannot be employed. The implementation of supervised treatment, because of its characteristics, requires planning, creativity, financing, and a guarantee of sustainability by the municipal government.

The "slow pace" at which the strategy has been implemented in Rio de Janeiro may be criticized. But the fact that it is a city where every square meter of the territory must be known, where a continuous evaluation of each step is necessary, and where a policy open to criticism and to new interpretations of the work process must be adopted, has to be taken into account.

This chapter is a real report about DOTS implementation in the Wonderful City.

5. COMMENTS

The city of Rio de Janeiro has one of the highest incidence rates of tuberculosis in Brazil and in 1999 DOTS was effectively implemented in the city

Probably, health policies, administrative, and ideological reasons delayed that implementation.

Anthropological, sociological reasons have made the local TCP activities more difficult. ST in shantytowns is a serious problem. People who are strangers in the shantytowns may have problems with the drug dealers who practically control everything in there.

However, nowadays a praiseworthy plan is being introduced in order to carry out that implementation.

The work at Rocinha, the famous shantytown, stands out.

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CHAPTER VIII

TUBERCULOSIS CONTROL, ADVANCES AND DIFFICULTIES FOR DOTS IMPLEMENTATION IN THE CITY OF PORTO ALEGRE, RIO GRANDE DO SUL

This chapter will present:

- The background and characteristics of Porto Alegre;
- The evolution of decentralization of health services;
- The absence of DOTS implementation in the city.

This chapter was basically elaborated by Ana Lúcia Bueno, Aline Aparecida Monroe, Roxana Isabel Cardozo Gonzales, Tereza Cristina Scatena Villa and Antonio Ruffino-Netto

1. BACKGROUND AND CHARACTERISTICS OF THE CITY OF PORTO ALEGRE, RIO GRANDE DO SUL (RS)

The state of Rio Grande do Sul has been fighting tuberculosis for a long time. In the 50's, asylums were constructed to treat tuberculosis patients. Sanatório Partenon is one of them. Located in the city of Porto Alegre it is still operational, offering assistance only to tuberculosis patients. It has 60 available beds to assist the cases from all the state when patients need to be hospitalized because of some clinical or psychosocial complications.

The city of Porto Alegre has about 1,394,000 inhabitants. The incidence rate of tuberculosis cases was 120.72/100,000 inhabitants in 2003, higher than the average in the whole state that is 47.2/100,000 inhabitants. That high rate could be explained by the bad living conditions of the residents from the poverty areas surrounding the city, by TB/HIV co infection, and by the prison system that is strongly concentrated in the city and its surrounding areas.

One of the greatest concerns of health authorities is the high rate of default in the city that was nearly 18.7% in 2003 (SES RS), higher than the national average that is 12%.The rate of cure was 64.8% in 2003 and the national average was 72% in the same year. According to the WHO, the rate of cure and default must be 85% and 5% respectively and there is an agreement that those figures should be reached mainly by the 22 countries where the rate of tuberculosis is 80% , among which Brazil is the fifteenth.

The city has a network strongly centered on outpatient assistance and it is divided in ten health units, that is, Phthisiology clinics with a secondary care status. Among those units, five of them belong to the municipal network, four of them are linked to Grupo Hospitalar Conceição and one of them is linked to Sanatório Partenon, which is a State organization

In January 1999, the Municipal Epidemiologic Surveillance intensified tuberculosis actions and, in that context, SINAN was implemented in accordance with the rules of the Ministry of Health. SINAN helps with the activities of search and control of tuberculosis cases in all the country. The medical professional who diagnosed the disease fills out the notification and later the notice is sent to the Epidemiologic Surveillance of the Municipal Secretary of Health so that it can be typed.

Health Units where Tuberculosis treatment is conducted are managed by the Pneumology Department of the city.

Identification of RS is conducted during routine work at the health services, or normal demand that is, an individual who has symptoms and who feels sick looks for doctor assistance. Normal demand takes place at Clinics of Phthisiology and at the Basic Health Units and Hospitals.

The city promotes Campaigns against Tuberculosis in order to identify RS, offers some general information about the disease, and provides bacteriology. Those campaigns take place on special days like World Day to Fight TB and National Day to Fight TB. The city also offers a free phone service for information about health facilities that conduct diagnosis and TB treatment.

A person who has respiratory symptoms is required to have two sputum smears and the results are available the in three or seven weekdays after collection. Depending on how serious the case is and its history, it is possible to ask for an emergency exam and get the results on the same day of collection.

When a tuberculosis case is diagnosed at the Outpatient Clinic of Phthisiology, drug treatment starts immediately. If diagnosis occurs at Basic Health Units or Hospitals, the tuberculosis patient is referred to the Clinic of Phthisiology to start the treatment. The city's public health network offers free additional exams like tuberculin test, thorax XR, blood test, liver function test, HIV test, hepatitis B and C, and others.

After Tuberculosis diagnosis is confirmed, the Outpatient Clinics of Phthisiology staff provides the patient with general guidelines and enough medication for thirty days, that is, enough medicine until the next medical appointment. In some cases, the patient receives medication for a shorter period, and the next appointment is scheduled according to the need of clinical follow-up (after one week, after fifteen days). Self-administered medication is used in the city, that is, the patient or the family is responsible for the administration of the medicine.

The Clinics of Phthisiology staff controls the patients using forms for monthly visits. In case of absentees, the team tries to get in contact with them by mail, phone calls, and home visits. If none of those measures is enough and if it can be proved that, they did not take medication for one month, default is considered official.

The small number of professionals working at Clinics of Phthisiology and the lack of Family Health Programs and Community Outreach Programs are some factors that make implementation of search for new cases and supervised treatment to follow patients under treatment in the city, more difficult. The lack of interaction between Health Basic Units and TB Specialized Services leads to an absence of treatment

follow-up for patients. The State tries to minimize that problem by qualifying the professionals at the basic health network in order to detect new TB cases.

2. STATUS OF DOTS IMPLEMENTATION IN THE CITY OF PORTO ALEGRE

For better understanding why DOTS has not been implemented in Porto Alegre so far, a brief reference to its history regarding tuberculosis control actions is necessary, mainly from the 70's on, when the TCP was introduced in the city. Some characteristics that have influenced the disease's epidemiologic situation were recollected through interviews with health professionals who work at the management and assistance of the Tuberculosis Control Program, in the city and in the State.

In the 70's, the program was increasingly complex, with permanent supervision at health units, professionals' qualification, and self administered treatment as the only model of patient follow-up. The technical and operational characteristics of the program led to a decrease of 6% of cases/year in all regions that time.

> *"…the rate of tuberculosis was decreasing 6% a year in all regions…Brazil knows that trend".*

The rise of TB/HIV co infection, disorganization of health services, lack of human resources, people's worse social economic conditions, and more recently, the jail system strongly concentrated in the city and surrounding areas, are some of the factors which have change the epidemiologic situation since the 90's. In 2003, the city had 120.72/100,000 cases of tuberculosis, higher than the state average that is nearly 47.2/100,000; the rate of default is almost 18.7% (SES RS), which has also been higher than the national average that is 12%. The rate of cure was 64.8% in the city and the average of the country is 72%.

In face of such scenario, tuberculosis stands out as a serious problem in the city, and the TCP Coordination, in an attempt to change the situation, designed a plan targeting the Mayor's involvement and the inclusion of this plan in the city's health agenda.

> *"One of the things we did was visit the so called priority cities, supervise, and try to encourage the Mayors to join a plan called Municipal Plan for Tuberculosis Control".*

The Mayor's involvement is essential because proposals need to be approved and financial resources are necessary to implement not only TB control actions but also strategies that are able to improve the epidemiological status of the disease. Among such actions is DOTS.

The Municipal Plan for Tuberculosis Control makes it easy to use the funds for TB actions. Moreover, among other proposals, it presents decentralization of diagnosis actions and patient follow-up, contemplating DOTS implementation. Each proposal is outlined technically and operationally to make its execution feasible. Although a technical and operational plan to implement DOTS in Basic Health Units already exists, its feasibility has been hindered by several factors. Here are some of them. A) The culture of those in charge of TB control in the city, who object to the introduction of other strategies, makes them believe that it is not necessary to adopt different forms of follow-up other than self-administered treatment, which has worked well for a long time, producing good results. B) The very organization of the Health System in the city, predominantly centered in outpatient assistance, provided by ten health units, e.g., phthisiology outpatient clinics. C) Laboratory support is centralized and is not systematically organized, which may make it difficult to meet the demand for sputum smears. D) The Decentralization of health and services occurs at a slow pace in the city, without the incorporation of the PSF/PACS. Such programs do not have a significant coverage due to the unwillingness of authorities.

> "*TB assistance provision at health units and the low coverage of these services (PSF/PACS) make DOTS implementation difficult...*"

The population's profile has also been identified as another factor that hinders DOTS implementation, mainly in relation to ST, once professionals do not see it as a priority in assistance to a population predominantly better off social economically speaking, who have relatives or caregivers. The disease afflicts specific groups, mainly the homeless and prison interns, among others.

3. FINAL CONSIDERATIONS

The TCP in the city of Porto Alegre was one of the best in the country in the last decade. However, nowadays it has had some problems with the organization of

TB care centered mainly in specialized clinics, a lack of communication between Basic Health Units and TB Specialized Services, a slow decentralization of basic care actions, cultural aspects involving the mayor, technician, and health professionals. Those problems have had some consequences and they show the need of a re organization of the TCP in the city in order to improve TB status. Authorities and health professionals need to change their attitude in order to incorporate strategies that contribute to a better planning and Program management to strengthen TB control actions.

Nowadays, there is plan for DOTS implementation; however, there does not seem to be a real mobilization to carry out that process.

Finally, although DOTS, especially ST, has not been implemented yet, some social institutions in the city have been using that treatment model following up the homeless who are enrolled in their programs. Those institutions have been responsible for the tuberculosis treatment follow-up and for the supervision of medicine administration, because they believe that population is their responsibility, and TB care are part of their assistance functions. Among those social institutions, we can mention "Casa de Convivência da Fundação de Assistência Social," which works directly with that specific population.

4. COMENTS

Although the rate of TB treatment default is still very high in Porto Alegre, there does not seem to be any local mobilization for DOTS implementation. The problem seems to be related not to human and financial resources but rather, very dependent on politicians' decisions about local health, who think that is the right way to act.

FINAL CONSIDERATIONS

We hope that this project will be useful for TCP supporters in different parts of this country.

We respect the different points of view of the players that are responsible for the TCPs in each place, as well as the different ways of managing the Program, implementing DOTS, or employing other models to minimize the disease that is a serious problem for public health.

It is important to highlight that our experience shows that every health service that decides to implement Supervised Treatment (ST) will be forced to ponder about their work performance, regardless of the big changes that might bring about. Maybe there lies the great success of the strategy implementation in some health services: a political will to rethink practices and a predisposition to resort to existing tools and rationalize activities.

All of that shows that implementing not only ST, but also a model of primary attention the way it should be conducted is good judgment. In our opinion, all of that can explain the success of Tuberculosis Supervised Treatment. The service that tries to perform its tasks aiming to decrease the rate of treatment default will finally understand that, in the absence of this target, it is the service that will abandon the patient. Implementing supervised treatment and then think about what has been done can be a way for the health service itself "not to feel abandoned." Some health professionals, who are involved with the strategy, offer to supervise the treatment of the service that the public administration left behind.

Supervising the patient's medicine intake is not enough... and watching the health service structure fall apart and request more organization is not enough either. What really matters is the patient's political will to be cured and the political will on the part of the service to really promote health and not only cure diseases.

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Bangkok 2000

Antonio Ruffino Netto

Meeting of twenty two countries
With some things in common:
All means to produce and harbor endlessly
Almost totality, including all mankind!
Cases of tuberculosis, disease...
Bearing a major symbol, the best indicator
Social inequality

Spokespeople, delegates
Your countries send messages
Painful wishes, airing despair
Need of medication!
Let it dawn on you for a moment!
Sadness, hopelessness, tired-looking eyes...
Let us out of the blue sky
Gather new hopes and expectation!
Feeling: a burden heavier than the disease
Awareness...knowledge,
Other than medicine and biology
The best way out would be
Have diplomats gather
And discuss economy
Soothing despair and needs
And understand that
Instead of drugs for the disease
The best medicine would be
Redeem social equality!

This poem was elaborated during the STOP TB Meeting, Bangkok, Thailand, January 24th 2000.