

## HANSENIASIS CONTROL IN SAO PAULO STATE, BRASIL \*

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ABSTRACT - Socioeconomic and sanitary characteristics of São Paulo State, where the Unified and Decentralized Health System (SUDS) is being developed, are described. SUDS basic strategy is the municipalization of primary health care. The Hanseniasis Control Program (GEPRO-hanseniasis), included in this context, is analysed under the point of view of administrative connections, objectives and performance. Special programs aiming at the absorption of new technology, such as multidrugtherapy and the early serological diagnosis of the disease, are also studied.

**Key words:** Hanseniasis. therapeutics. DNCB. Sensitization.

This presentation about Hanseniasis Control Program in São Paulo State, Brazil is not at all an investigative paper, but only a description of the epidemiological picture, some organizational issues and strategies adopted by the control program, including the absorption of new technologies.

São Paulo is the most urbanized and economically developed State in Brazil, where more than 20% of the Brazilian population live, almost 90% of then in urban areas. The State generates more than one third of the country's gross national product. São Paulo city, the capital of the State is the largest city in South America with 7,4% of the country's population and collects almost 20% of the national revenue. (Figura 1).

According to many different points of view,

the region can be considered as a developed one, but it presents several great socio-economic problems such as the existence of two million people living in squatter settlements and a 9,1% of unemployment rate.

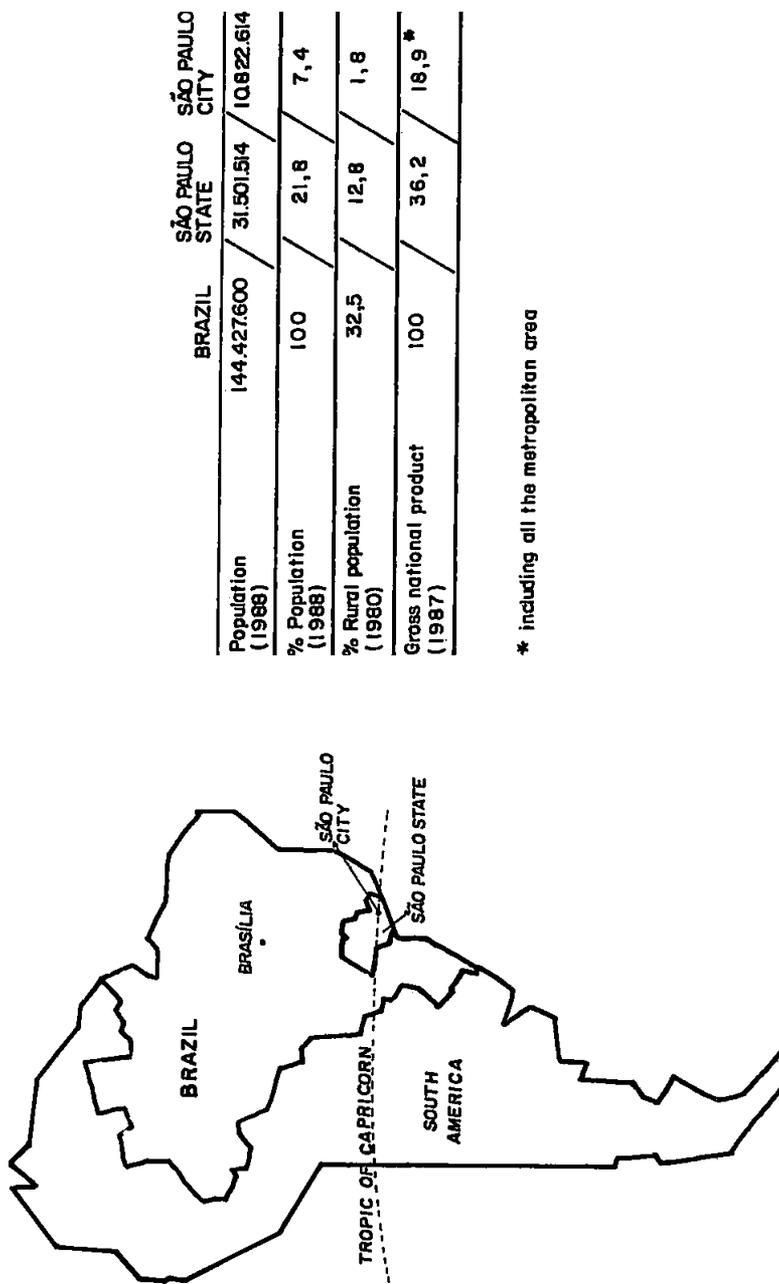
Health indicators, such as life expectancy at birth and infant mortality rates in the State, reflect this duality presenting better values than the Brazilian average, but still far from those presented in most of the developed countries and from the recommended international patterns (FIGURA 2).

The historical trend of such indicators in recent years is, however, clearly favourable as we can see in the well marked fall of infant

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**FIGURE 1** - Demographic situation and gross national product - Brasil, Sao Paulo State and São Paulo City.



Source: IBGE/SEADE (Brazilian Institute for Geography and Statistics / Data Analysis System Foundation of the São Paulo State).

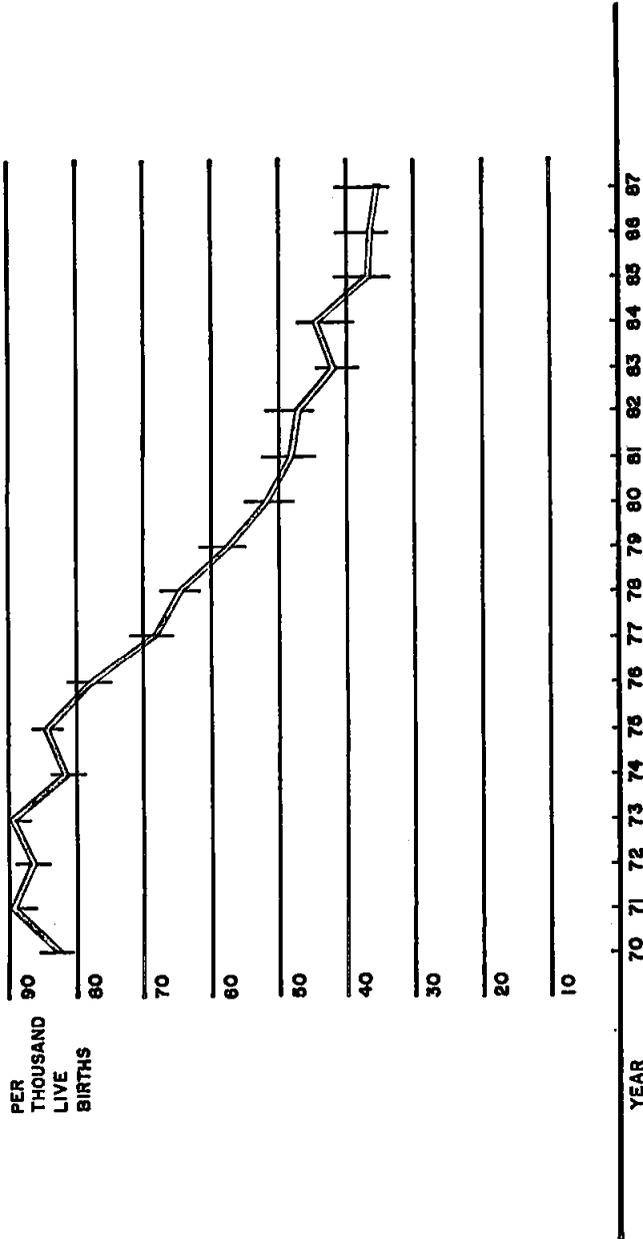
**FIGURE 2** - Health indicators - Brazil and São Paulo State.



	BRAZIL	SÃO PAULO STATE
Life expectancy at birth ( years) ( 1980)	60,08	63,55
Infant mortality coefficient / 1,000 live births ( 1980)	63,22	50,62
Infant mortality coefficient / 1,000 live births (1987)	-	33,18

Source: IBGE/SEADE (Brazilian Institute for Geography and Statistics / Data Analysis System Foundation of the São Paulo State).

**FIGURE 3 -** Infant mortality in the State of Sao Paulo.



mortality rate between 1970 and 1987 (Figure 3).

As to the epidemiological situation of hanseniasis, the disease trend in São Paulo State can be considered as steady during the last years, differently from what happens in the rest of the country as a whole (Table 1).

The distribution of new detected cases in the last three years by clinical type of disease reveals, however, a proportion of 70% of late diagnose cases, although it seems to exist a discrete trend towards a bigger proportion of Indeterminate cases, which we

consider as synonym of early diagnosis of leprosy (Table 2).

The proportion of new cases among people under 15 was around 4% in the last years for São Paulo State, what is markedly below Brazilian average.

The epidemiological situation in the urban area of the municipality of São Paulo is more serious. Although the general detection rates are rather inferior to those found in the State, the proportion of new cases among people under 15 is around 6% and the proportion of Indeterminate cases is below 20% (Table 3 and 4).

**TABLE 1** - Prevalence and detection rates of hanseniasis in São Paulo State, Brazil - 1980-1988.

Year	Prevalence ‰	Detection ‰/1000
1980	1,58	10,03
1981	1,34	13,43
1982	1,41	10,36
1983	1,37	9,80
1984	1,26	9,13
1985	1,24	9,27
1986	1,24	8,28
1987	—	8,43
1988*	—	8,68

\* Preliminary data

Source: CIS (Health Information Center of the São Paulo State Secretariat).

**TABLE 2** - New detected cases of hanseniasis by clinical type of the disease, in São Paulo City, State of São Paulo, Brazil - 1986, 1987, 1988.

Clinical Type of the Disease	Virchowian		Dimorphic		Tuberculoïd		Indeterminate		Unknown		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
1986	143	36,20	50	12,66	133	33,67	69	17,47	-	-	395	100,00
1987	153	34,54	72	16,25	132	29,80	86	19,41	-	-	443	100,0
1988*	132	34,20	57	14,76	115	29,80	77	19,94	5	1,29	386	100,0

\* Preliminary data

Source: CIS (Health Information Center of the São Paulo State Secretariat).

**TABLE 3** - Hanseniasis Detection in São Paulo City and São Paulo State, Brazil - 1986, 1987, 1988.

Local	Year	1986		1987		1988 <sup>a</sup>	
		Number	Coeff. (0/0000)	Number	Coeff. (0/0000)	Number	Coeff. (0/0000)
São Paulo City		385	3,74	437	3,98	386	3,29
São Paulo State		2484	8,28	2688	8,43	3184	8,68

\* Preliminary data

Source: CIS (Health Information Center of the São Paulo State Secretariat).

**TABLE 4** .New detected cases of hanseniasis by clinical type of the disease, in São Paulo City, State of São Paulo, Brazil - 1986, 1987, 1988.

Clinical Type of the Disease Year	Virchowian		Dimorphic		Tuberculoïd		Indeterminate		Unknown		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
1986	947	37,06	231	9,04	708	27,31	673	26,34	6	0,23	2555	100,00
1987	931	34,63	305	11,35	705	26,23	739	27,49	8	0,30	2688	100,00
1988*	1019	32,01	282	8,85	849	26,66	1006	31,60	28	0,87	3184	100,00

\* Preliminary data

Source: CIS (Health Information Center of the São Paulo State Secretariat).

The proportion of early diagnosed cases does not reach 20%, probably because conditions of life in a big city and characteristics of medical care in metropolitan areas make patients attendance to medical services difficult. Because of this situation, the Control Program launched an intensive training program for physicians and other professionals from the health staff in the Capital city, aiming at an early diagnosis of cases.

An attempt of mapping the disease in the State shows that among the 575 municipalities that comprehend it, the prevalence rates apparently do not show any trends towards clustering, whether among those with lower rates of prevalence (less than 0,11 per thousand) or among those with higher rates of prevalence (more than 5,2 per thousand).

We can see that none of the ten municipalities presenting extreme rates is located in the metropolitan region of the Great São Paulo (Figure 4).

From the view point of administrative organisation, the health sector in São Paulo State is at the moment implementing the Unified and Health System which, according to the basic principles of decentralisation and hierarchization of health activities divides the State into five macro-regions and 62 local health offices (Figure 5).

The health system is also establishing a new budgeting model that includes Federal funds from social security and delegates primary health care for the municipality, thorough contractual agreements.

In this context the Hanseniasis Control Program (GEPRO), as well as other health programs is directly subordinated to the State health secretariat through the CADAIS, Center for Support to the Development of Integral Health Care. CADAIS was created to perform normative tasks and to give technical

assistance to executive organs.

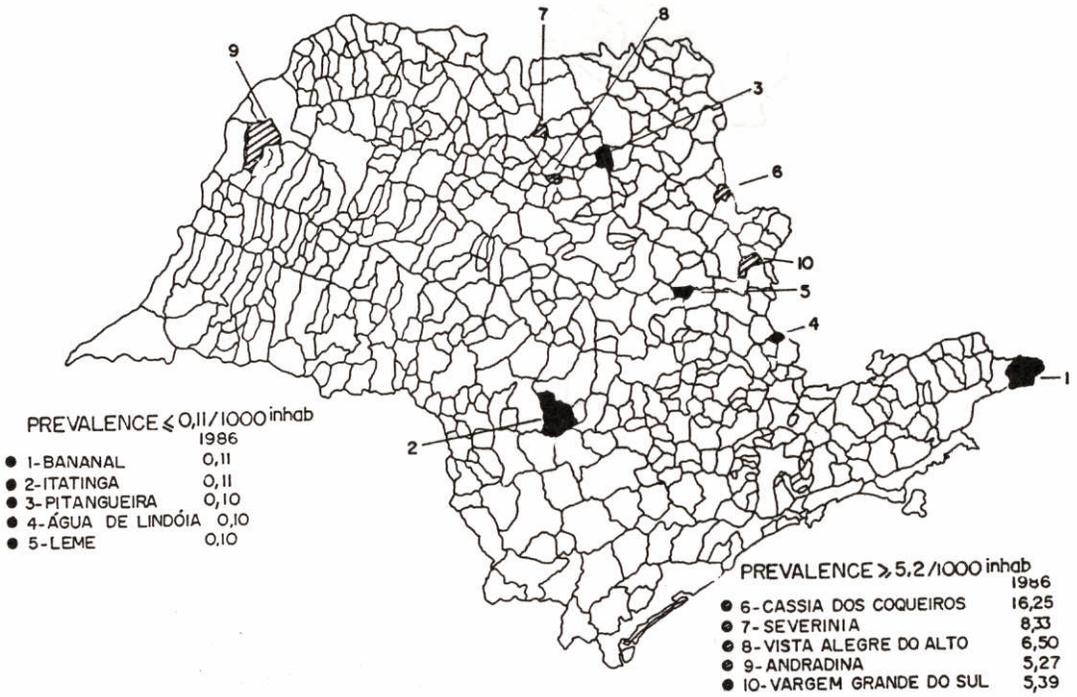
The public and the private health network São Paulo State is complex: the Hanseniasis Program is of exclusive responsibility of the public sector being performed mainly in the 608 of the 2472 basic health units that belongs to the State. They are backed up by the dermatological clinics, sanitary dermatological hospitals and laboratories (Figure 6).

The proposals of the Hanseniasis Control Program are summed up in a five-point proposition as follows:

1. effective integration of the hanseniasis patients attention to the health system;
2. execution of the program for handicapping prevention through simple techniques or rehabilitation;
3. implementation of therapeutic schemes of multidrugtherapy (MDT);
4. reestructuration of sanitary dermatological hospitals;
5. establishment of a dermatological research institute in Bauru, São Paulo State, as a center of excellence for the State Control Program.

In 1988 the Hanseniasis Control Program performance was considered as excellent by the Health Secretariat. Among other parameters it presented an increase of 31% in the number of medical visits when compared to 1987, with an homogenous distribution all over the State (Figure 7). The implementation of multidrugtherapy (MDT) by the State Health Secretariat, together with the Ministry of Health, started later, compared to the rest of the country, (only in May 1988). Until the end of that year we had 149 patients in MDT, mostly new ones, distributed by five projects, three in the central zone of the Capital, one in the peripheral zone and one in the interior of the State. In 1989 five more projects are being implemented, three of them in the interior of the State (Table 5).

**FIGURE 4** - Municipalities with higher and lower prevalence rates of hanseniasis in São Paulo State - 1986.



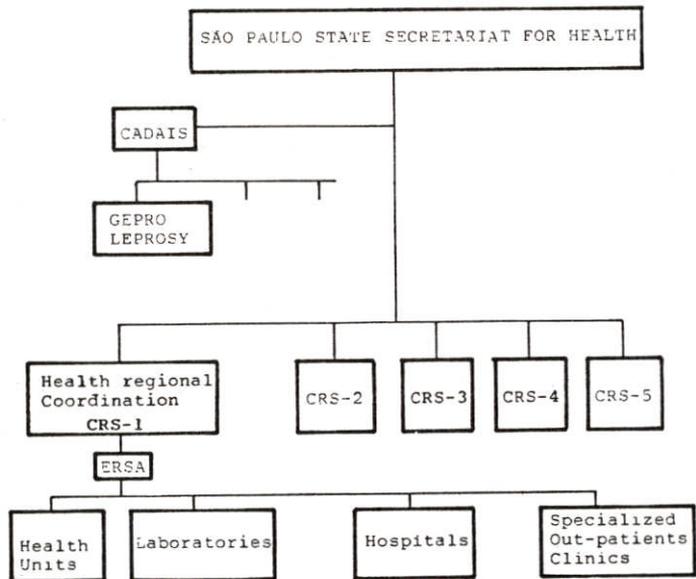
Source: CIS (Health Information Center of the Sao Paulo State Secretariat).

**FIGURE 5** - Unified and Decentralized Health System (SUDS), São Paulo State.



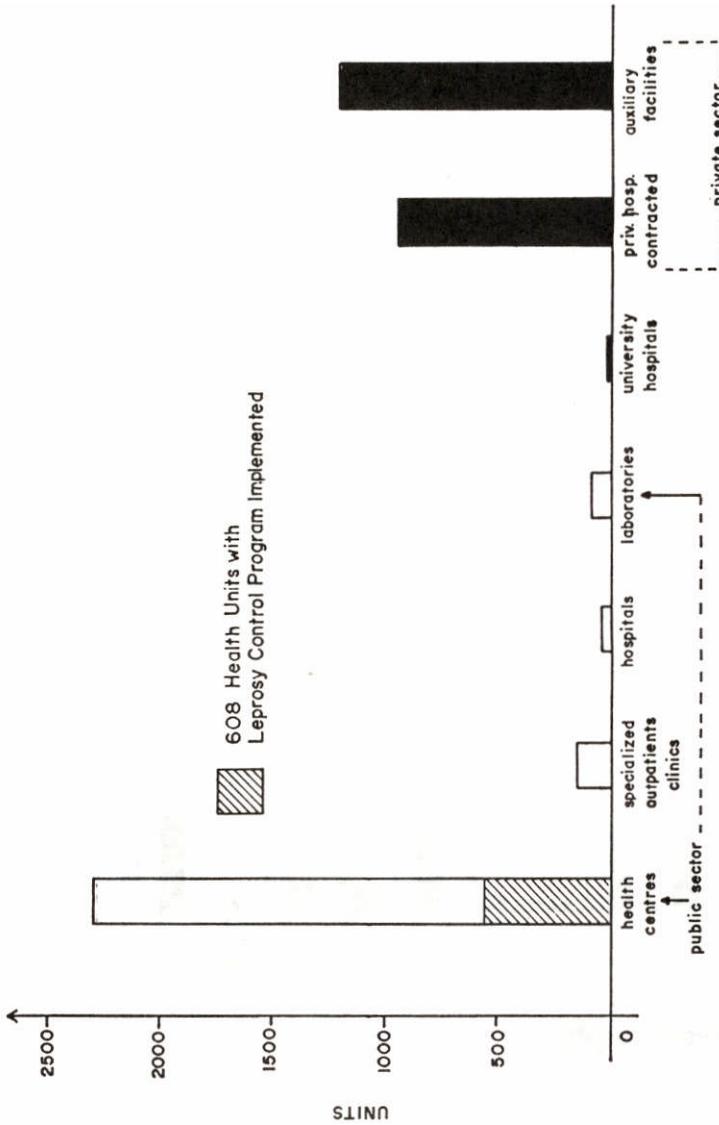
**Number of macro-regions: 5**

**Number of ERSA: 62**



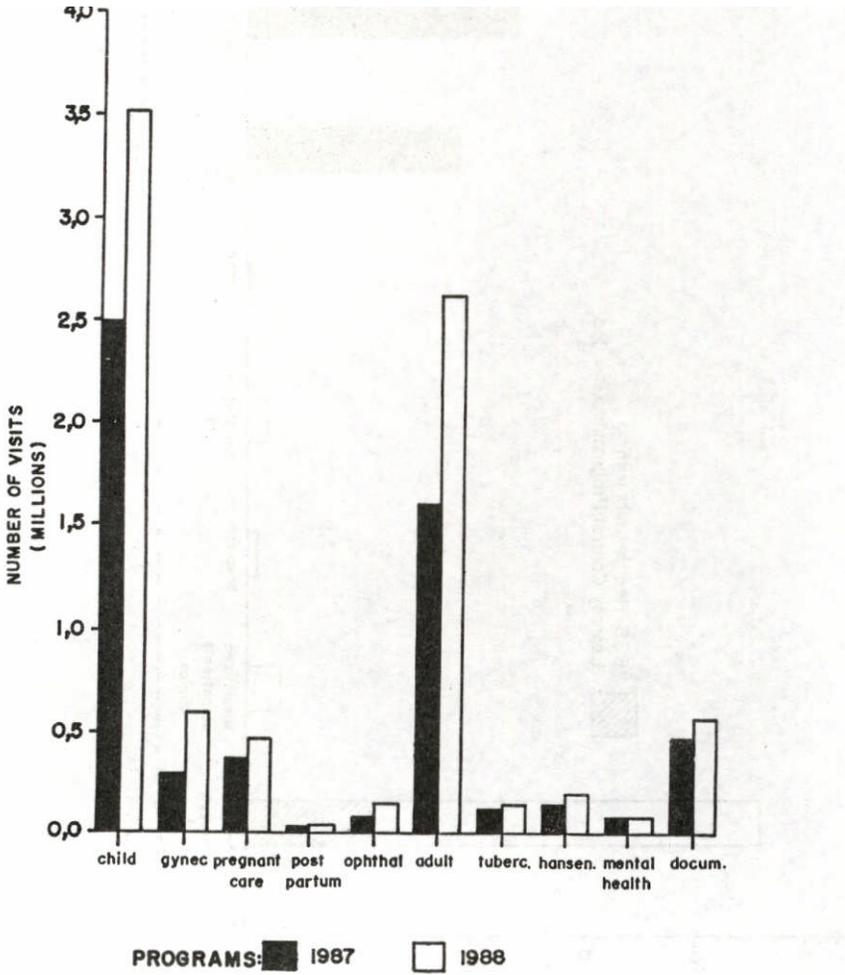
Source: São Paulo State Secretariat for Health - SUDS-SP<sup>1</sup>/CADAIS<sup>2</sup> (adapted).

**FIGURE 6** .Health Care facilities participating in SUDS-SP by type of service provided - 1988.



Source: São Paulo State Secretariat for Health - SUDS-SP<sup>1</sup>/CADAIS<sup>2</sup> (adapted).

**FIGURE 7** .Number of medical visits produced per programme - State of São Paulo.



Source: São Paulo State Secretariat for Health - SUDS-SP1/CADAIS (p.40)2 (adapted).

**TABLE 5** - Number of patients submitted to multidrugtherapy for hanseniasis until 31/12/1988, by implemented project.

Clinical type \ Project	Tatuf	Health Institute	School of Public Health	Santo Amaro	Clinics Hospital (U.S.P.)	Total
Multibacillary	36	16	9	23	163	240
Paucibacillary	20	27	6	11	117	179
<b>Total</b>	<b>56</b>	<b>43</b>	<b>15</b>	<b>34</b>	<b>280</b>	<b>419</b>

Source: GEPRO-Hanseniasis<sup>3</sup>.

The Hanseniasis Control Program in São Paulo State is interested in absorbing new technology in order to improve the disease control. Preoccupied with the poor performance of classic strategies used in contacts control and thanks to a cooperation agreement signed with the Cuban Government, a seroepidemiological program was launched aiming at the detection of IgM antibodies against *M. leprae*, using the semi-synthetic disaccharide of the phenolic glycolipid (PGL-1) and the automatized microELISA equipment made in Cuba.

At the beginning, mainly to help the training of Brazilian technicians, 338 sera samples were tested. Multi and pauci-bacillary patients, in-household and other contacts, employees working in the Hanseniasis Control Program and in other programs and control cases (patients suffering from tuberculosis, colagenosis, etc).

As you can see, the results are not different from those already cited in the international literature. We have 21,7% positive among the multi-bacillary, 13% positive among the pauci-bacillary, 2% in in-home contacts, and 3,9% positive in employees of the Hanseniasis Program. No positive results among the control were found (Table 6).

At the moment we have already selected two municipalities in the interior of the State and we are choosing two areas in the Capital city for a sero-epidemiological study in order

to define high risk groups and levels of cut off for positive and negative results in our population.

The selected municipalities are Severina and Bananal, two counties of the State which have the same demographic and socio-economic characteristics; one of them shows very high values in detection rates, and the other shows that these same rates are equal to zero (Figure 8).

On a further stage, if the conclusions are favourable we intend to implement pilot areas in order to define routine procedures of serological follow-up for high risk groups, aiming at the early hanseniasis diagnosis.

At the moment, the two great challenges faced by Hanseniasis Control Program in São Paulo State are:

the integration of the Program into the Unified and Decentralized Health System, which comprehends curative and preventive measures, ranging from primary care level (delegated to local authorities) to complex decisory technical levels;

the absorption of new technology by the Program activities specially in the areas of diagnosis and therapeutics.

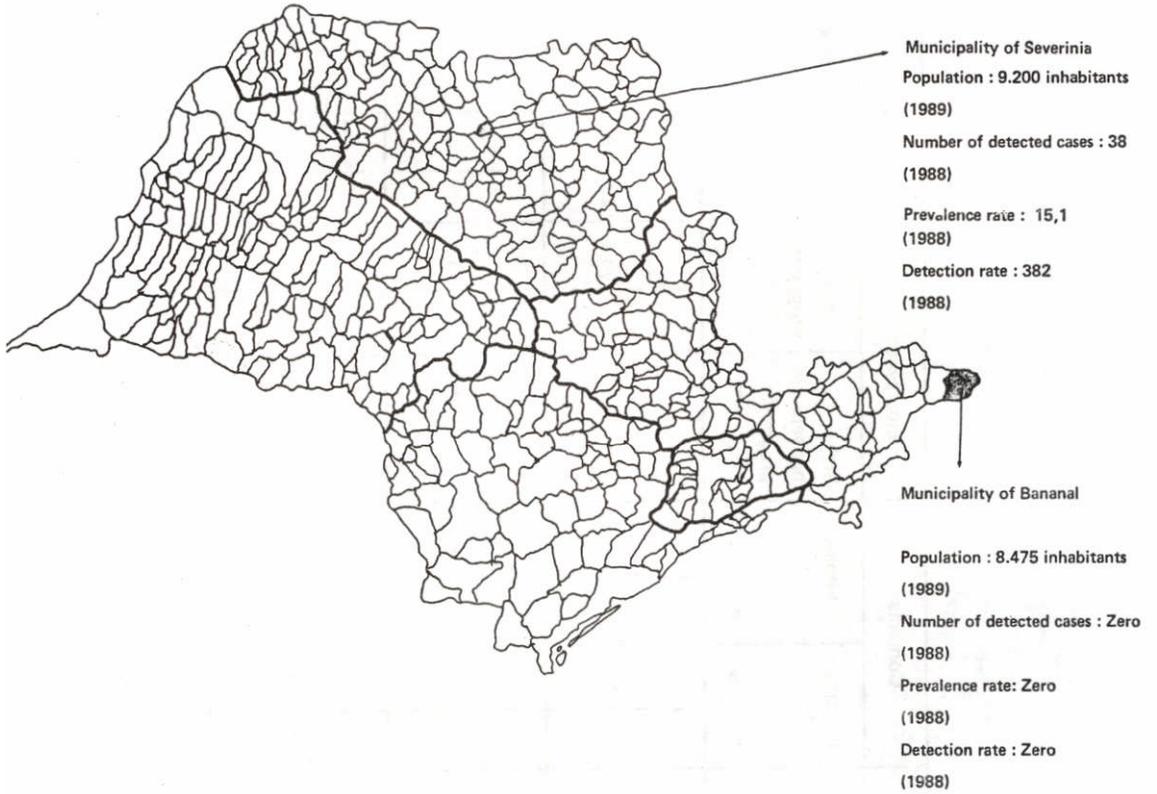
Based on a programming axis having epidemiology and integrated planning as baselines, the Controle Program is, in our opinion, satisfactorily assimilating these new realities and walking towards the improvement of the epidemiologic situation in São Paulo State.

**TABLE 6** Results of the serologic test for hanseniasis (PGL-1/microELISA) in serum samples - São Paulo State, Brazil, 1988.

Serum Samples	Patients		Contacts		Employees		Controls		Total	
	multib.		in-home		in the hanseniasis program		TBC		others	
	n	%	n	%	n	%	n	%	n	%
Results										
Negative (< 140)*	42	53,8	9	60,0	12	80,0	65	85,5	22	100
			37	82,2	3	20,0	61	78,2	9	100
Dubious (140 - 300)	19	24,3	4	26,6	7	15,5	8	10,5	--	--
							16	20,5		
Positive (≥ 300)	17	21,7	2	13,3	---	0,0	3	3,9	--	--
							1	1,2		
TOTAL	78	100	15	100	15	100	76	100	22	100
			45	10			78	100	9	100
										338
										76,0
										16,8
										7,1
										100

\* Fluorescence units  
Source: GEPRO-hanseniasis<sup>3</sup>.

**FIGURE 8** - Project for serology implementation in the Hanseniasis Control Program - São Paulo State, 1989.



Source : GEPRO- Leprosy

Source: São Paulo State Secretariat for Health - GEPRO-hanseniasis<sup>4</sup>.

RESUMO - São descritas as características sanitárias e sócio-econômicas do Estado de São Paulo, onde está sendo desenvolvido o Sistema Unificado e Descentralizado de Saúde (SUDS). A estratégia básica do SUDS IS a municipalização dos cuidados primários de saúde.

O programa de controle da hanseníase (GEPRO-Hanseníase) incluído neste contexto analisado sob o ponto de vista de conexões administrativas, objetivos e realizações.

São também estudados programas especiais visando a absorção de novas **tecnologias**, tais como: a multidrogaterapia e o diagnóstico precoce sorológico da doença.

**Palavras-chave:** Epidemiologia. Hanseníase.

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