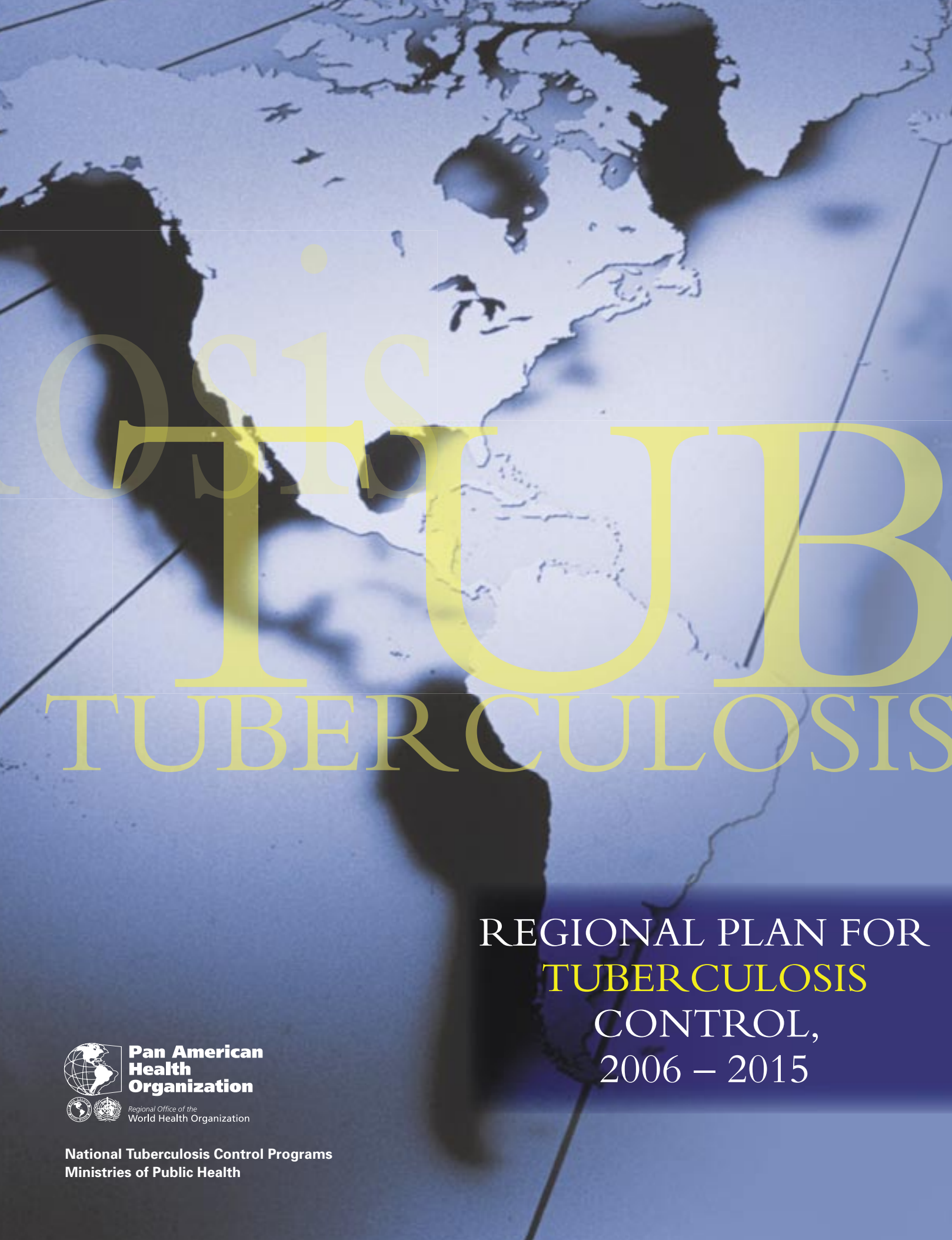

REGIONAL PLAN FOR TUBERCULOSIS CONTROL, 2006 – 2015

Pan American Health Organization
Regional Office of the World Health Organization

National Tuberculosis Control Programs
Ministries of Public Health

Regional Plan for Tuberculosis Control, 2006—2015

Health Surveillance and Disease Management Area (HDM).
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Ministries of Public Health

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Abbreviations

ACSM:	Advocacy, communication, and social mobilization
AIDS:	Acquired immunodeficiency syndrome
ARV:	Antiretroviral
CAREC:	Caribbean Epidemiology Center
CC:	Collaborating center
DOTS:	Internationally-recommended tuberculosis control strategy, which includes directly observed treatment, short-course
DOTS-Plus:	Case management strategy for multidrug-resistant tuberculosis, using DOTS
GFATM:	Global Fund to Fight AIDS, Tuberculosis, and Malaria
GLC:	Green Light Committee
HIV:	Human immunodeficiency virus
HRD:	Human resource development
IMCI:	Integrated Management of Childhood Illness
IUATLD:	International Union Against Tuberculosis and Lung Disease
MDG:	Millennium Development Goals
MDR-TB:	Multidrug-resistant tuberculosis
NGO:	Nongovernmental organization
NTP:	National tuberculosis program
PAHO:	Pan American Health Organization
PAL:	Practical Approach to Lung Health
PLWHA:	People living with HIV/AIDS
PPM:	Public-private mix
SRL:	Supranational Reference Laboratory
SS+:	Sputum-smear positive (pulmonary tuberculosis)
SS–:	Sputum-smear negative (pulmonary tuberculosis)
TB:	Tuberculosis
TB/HIV:	TB and HIV coinfection
WHO:	World Health Organization

Preface

The Region of the Americas has made great strides in tuberculosis (TB) control with the successful implementation of the DOTS Strategy, which has enabled some of the countries to reach the targets of the Millennium Development Goals (MDGs). Nevertheless, according to World Health Organization (WHO) estimates, there were 370,000 new cases and 53,000 deaths from TB in the Region in 2004—largely in poor countries. These figures are unacceptable in our time, when effective treatments are available that could prevent the pain and suffering caused by TB. In response to this burden of disease and death, the Pan American Health Organization (PAHO), in conjunction with the national tuberculosis control programs (NTPs) in the Member Countries, has prepared the Regional Plan for Tuberculosis Control, 2006–2015, whose vision is a tuberculosis-free Western Hemisphere by 2050. The mission is to guarantee each patient with TB full access to quality diagnosis and treatment in order to reduce the social and economic burden and inequity caused by the disease.

The new challenges for TB control, represented basically by TB associated with infection by the human immunodeficiency virus (HIV); the resistance of *Mycobacterium tuberculosis* to tuberculosis drugs; the growth of inequity stemming from the rising poverty of our peoples; and the presence of weak health systems in many countries, have led to marked differences in the epidemiological and TB control situation in the countries of the Region.

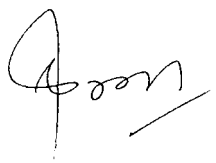
The Regional Plan for Tuberculosis Control, 2006–2015, includes cost-effective control strategies, such as DOTS, that facilitate timely diagnosis and equity in the community. The Plan also includes integrated care, with emphasis on the prevention and control of TB/HIV coinfection and multidrug-resistant TB (MDR-TB). Other strategies facilitate access; reduce the cost to the patient; shorten delays in diagnosis through the involvement of all health care providers; improve health systems, especially in the area of primary care; strengthen laboratory networks and human resource policies; and provide integrated care for patients with respiratory illness. The Plan includes research into the work of the TB control programs as a complement to evaluation, identifying appropriate interventions. Patients with TB and the community are involved in control activities, promoting advocacy, communication, and social mobilization strategies.

These strategies are reflected in six lines of work that identify interventions at the national and regional levels, differentiated by the varied epidemiological situations. These lines of work assist in the development of priority strategies that bridge the epidemiological and control gaps among and within the countries.

The Regional Plan has been conceived as an instrument for accelerating achievement of the targets proposed for 2005 in countries that have been left behind, and for reaching in each of them the Millennium Development Goal of halving TB prevalence and mortality by 2015 over 1990 figures as a step toward eliminating TB as a public health problem.

Implementation of the Plan will require resources in the amount of US$1,800 million. The resolutions Sustainable Financing for Tuberculosis Prevention and Control, adopted by the 58th World Health Assembly (WHA 58.14), and Regional Strategy for Tuberculosis Control for 2005–2015 (CD46.R12), adopted by the 46th Directing Council of PAHO, reinforce the countries' commitment to contributing national resources and call on partners to provide sufficient external resources to meet the TB control targets.

This Regional Plan, widely debated and aligned with the Global Plan to Stop TB, outlines the interventions to pursue over the next 10 years—2006 to 2015—to attain the MDGs. Its strategic lines of work are consistent with the Global Plan to Stop TB; actions to be taken are detailed and the resources required have been estimated. What remains is to demonst rate our steadfastness and ability to enlist other social actors, secure political commitment, and obtain the financial resources for its execution.



Dr. Mirta Roses Periago
Director

I. Introduction

The Pan American Health Organization, in response to the epidemiological challenge that tuberculosis represents, declared tuberculosis a health priority in Directing Council Resolution CD39/20 in 1996, convening and committing the Member Countries' governments to implementing the DOTS Strategy.

Since then, a Regional policy was designed that seeks to attain the following work objectives: (i) to extend and/or implement the DOTS Strategy, (ii) to position TB control as a health priority of the Member Governments, and (iii) to raise the awareness of partners and international donor agencies about the need to support the countries of the Region.

Up until 1996, only six countries had implemented the DOTS Strategy at a national scale, covering 9.9% of the Region's population. Between 1996 and 2003, DOTS Strategy implementation was started and later expanded to practically all the countries, eventually covering 78% of the population of the Americas by 2003.

Donor agencies and partners played an important role at that stage, and joint activities that were carried out resulted in an increase in the economic resources available to the national tuberculosis programs for the implementation and expansion of the DOTS Strategy, and to the Regional Program for strengthening the technical capacity of the national programs.

However, despite the efforts made in recent years, tuberculosis continues to cause suffering and economic losses in the Americas. In light of this reality, PAHO, together with the countries of the Region, has decided to intensify TB control by strengthening the DOTS Strategy and implementing new initiatives to stop TB and overcome the new challenges produced by the spread of HIV/AIDS, multidrug-resistant tuberculosis, increasing inequity, and poverty. These new initiatives should respond to immediate and long-term goals designed to reduce the disease burden and reach the Millennium Development Goals.

The 46th Session of the Directing Council, held in September 2005 in response to the new challenges posed by TB control, adopted Resolution CD46.R12 Regional Strategy for Tuberculosis

Control for 2006–2015. This resolution reaffirms the commitment of the countries to ratify TB control as a priority in health programs, and to allocate the necessary financial and human resources, and endorses the Regional Plan for Tuberculosis Control, 2006–2015, as the basis for the formulation of national plans.

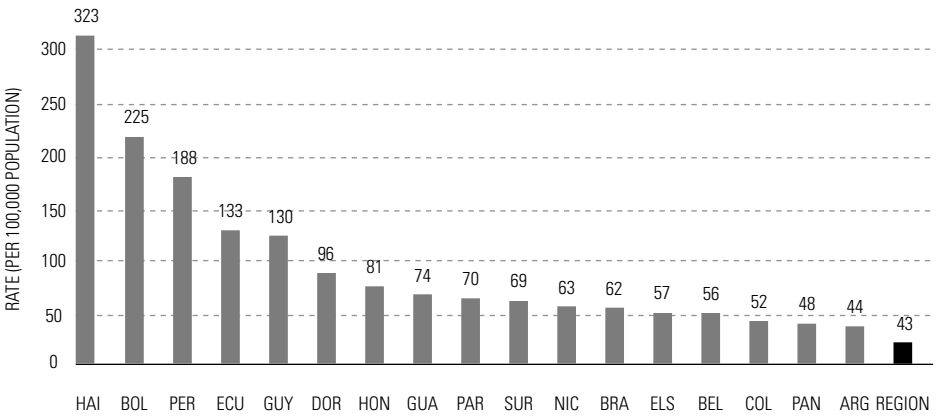
The Regional Plan for Tuberculosis Control, 2006–2015, has been drafted on the basis of the experience with the expansion of the DOTS Strategy in the Region and is strengthened by the countries' renewed commitment to TB control with the plan to implement the new WHO Stop TB Strategy.

II. Status of tuberculosis in the Americas

EPIDEMIOLOGICAL SITUATION

In 2003, according to WHO estimates, there were 502,605 prevalent cases, 370,107 new cases of TB in its all forms,[1] and 53,803 deaths, with an estimated incidence rate for all forms of TB of 43 per 100,000 population, ranging from 323 in Haiti to less than 5 per 100,000 population in the United States. Seventeen countries had estimated incidence rates for all forms of TB above the Regional average, accounting for 82% of the estimated new cases and 43% of the population (Figure 1).

Figure 1 ◣ **Countries with estimated TB incidence (all forms) above the Regional average, 2003.**

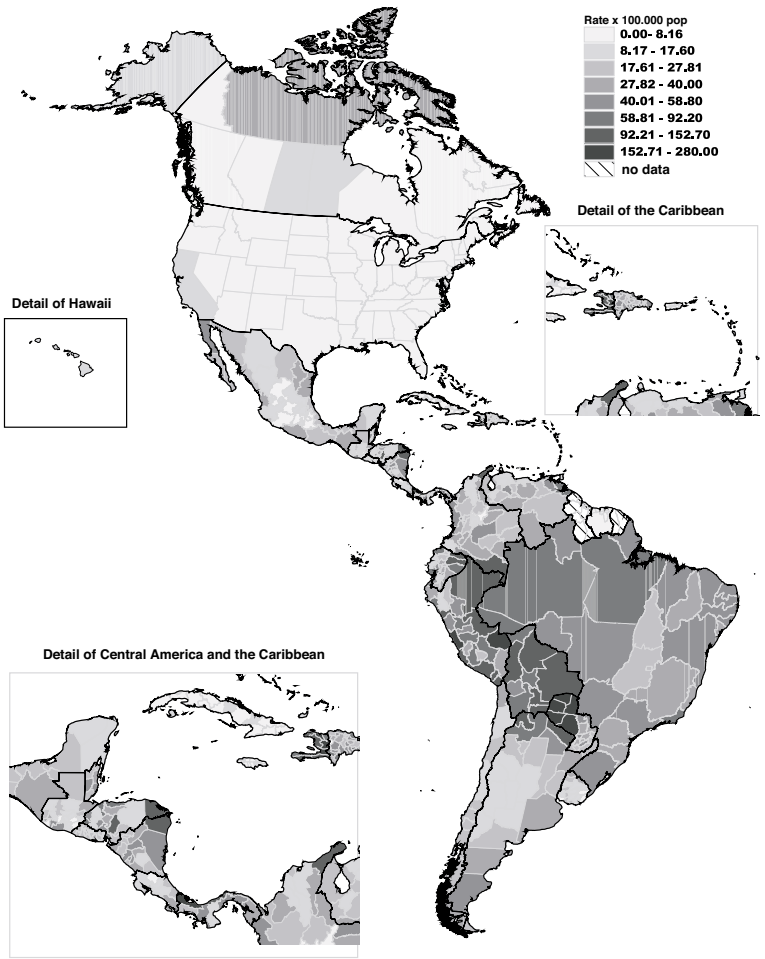


Source: World Health Organization. *Global Tuberculosis Control: Surveillance, Planning, Financing. WHO Report 2005.* Geneva: WHO; 2005. (WHO/HTM/TB/2005.349).

TB case reporting by the countries shows lower values than the estimates, with a case detection rate for all forms of TB of 61% and a sputum-smear positive (SS+) rate of 76%. Brazil reported 35% of the cases in the Region, followed by Peru with 15%; together they reported half of the new cases for the entire Region. Bolivia, the Dominican Republic, Ecuador, Haiti, Honduras, Mexico, and Nicaragua accounted for 25% of new cases (Map 1).

1 *WHO includes in* ***"new TB cases, all forms"*** *all new pulmonary cases (regardless of the result of sputum-smear microscopy), new cases of extrapulmonary TB, and relapses.*

Map 1 ◣ **Notified incidence of tuberculosis in the Region of the Americas, 2003.**



Source: Pan American Health Organization. Health Situation in the Americas. Basic Indicators. Washington, DC: PAHO; 2005.

Tuberculosis Trends, 1994–2003

In the period 1994–2003, a downward trend was seen in the Region as a whole in the rates of all forms of TB, falling from 32 to 26 cases per 100,000 population, and of SS+, falling from 19 to 14 per 100,000 population, (Figure 2A). However, this trend was influenced by the large populations of the United States and Canada. If the data for Latin America and the Caribbean are analyzed, the downward movement in the rates were less than the U.S. and Canada and the values for the incidence rate of all forms of TB and SS+ for 2003 were 1.5 and 1.6 times greater, respectively (Figure 2B).

Figure 2A ◣ **Reported incidence rate for all forms of TB and SS+, Region of the Americas, 1994–2003.**

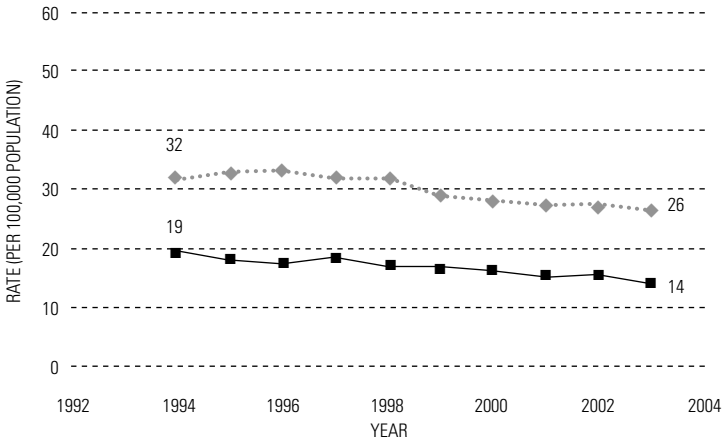
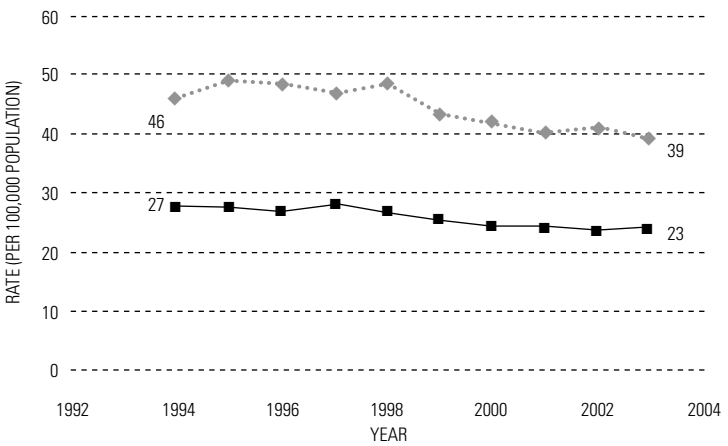


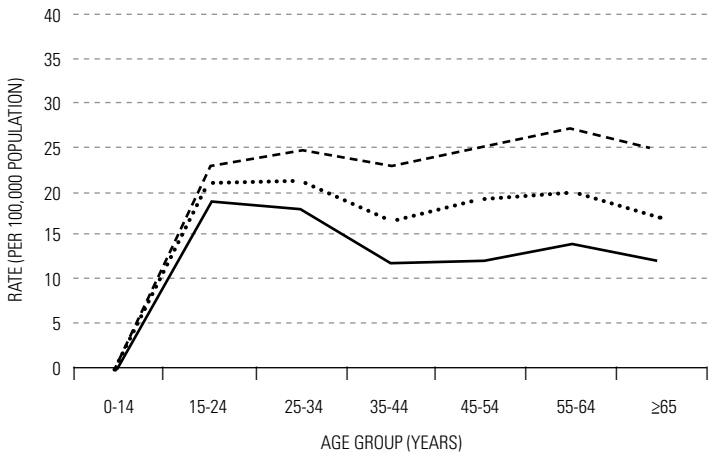
Figure 2B ◣ **Incidence rate for all forms of TB and SS+, Latin America and Caribbean, 1994–2003.**



Source: World Health Organization, tuberculosis data collection forms, 1994–2003.

In 2001, the TB rate was higher in men than in women in all age groups, a difference that grows more pronounced beginning with the 15-to-24–years age group, with a male-to-female ratio of 1.5:1. The characteristics of the age-specific incidence rates show the presence of active tuberculosis transmission among young people (Figure 3).

Figure 3 ◣ **SS+ incidence rate, by sex and age, Region of the Americas, 2001.**



THREATS TO TUBERCULOSIS CONTROL

TB/HIV Coinfection

In the Americas, HIV/AIDS is an established epidemic that is continuing to spread. By the end of 2004, more than 3 million infected people had been recorded, half of them in Latin America (1,700,000 people living with HIV/AIDS [PLWHA]), 440,000 in the Caribbean, and nearly 1 million in North America.

The HIV epidemic is generalized in 11 countries in Central America and the English-speaking Caribbean, of which five have high rates of TB: the Dominican Republic, Guatemala, Guyana, Haiti, and Honduras. It should be noted that in the last five years, the HIV/AIDS epidemic in Panama, the English-speaking Caribbean, and in large cities in Brazil, Argentina, and Uruguay has grown rapidly.

HIV infection is the most powerful risk factor known for the development of tuberculosis. One of the results of this biological interaction is that HIV has increased the global TB burden. It is estimated that in Latin America and the Caribbean, 12,000 TB cases each year are attributable to HIV.[2] WHO estimates that the impact of the HIV epidemic on TB in Latin America and the Caribbean was a 1.3% increase in TB prevalence in 2003.

However, there are large regional differences in the coinfection rate. According to systematic surveillance carried out by six countries in 2003, the prevalence of HIV coinfection in patients with TB ranged from 0% in Cuba to 40% in Jamaica.

2 *Corbett EL, Watt CJ, Walker N, Maher D, Williams BG, Raviglione MC, Dye C. The growing burden of tuberculosis: global trends and interactions with the HIV epidemic.* Arch Intern Med *2003;163(9):1009-21.*

Multidrug-resistant Tuberculosis

Resistance to tuberculosis drugs, and specifically multidrug resistance (resistance to isoniazid and rifampicin), in never-before treated cases has been widely studied in the Region and is posing a problem for TB control. The data through 2002 showed that in the majority of the countries the prevalence of multidrug resistance in new cases was below 3%, with the lowest percentages in countries with successful TB control programs, such as Cuba, Chile, El Salvador, Uruguay, and Venezuela. Most of the countries record primary MDR-TB percentages between 1% and 2.9%; only four countries have prevalence of 3% or more: the Dominican Republic, Ecuador, Guatemala, and Peru (Table 1).

Table 1 ◣ **Prevalence of primary MDR-TB (new SS+ cases), Region of the Americas, 1994-2002**

COUNTRY	YEAR	RESISTANCE			
		Initial		Secondary	Combined
		Global	MDR	MDR	MDR
Argentina	1999	10.2	1.8	9.4	3.1
Bolivia	1996	23.9	1.2	4.7	2.1
Brazil	1995	8.6	0.9	5.4	1.3
Canada	2000	8.5	0.7	3.4	0.9
Chile	2001	11.7	0.7	4.8	1.4
Colombia	1999	15.5	1.5	-	-
Cuba	2000	5	0.3	2.6	0.5
Dominican Republic	1994	40.6	6.6	19.7	8.6
Ecuador	2002	20	4.9	24.3	7.2
El Salvador	2001	5.7	0.3	7	0.8
Guatemala	2002	34.9	3	26.5	7.4
Honduras	2002	17.2	1.8	6.9	2
Mexico*	1997	14.1	2.4	22.4	7.3
Nicaragua	1997	15.6	1.2	-	-
Paraguay	2002	11.1	2.1	4	-
Peru	1999	18	3	12.3	4.3
Puerto Rico	2001	12	2	-	-
Uruguay	1999	3.2	0.3	-	-
USA	2001	12.7	1.1	5.2	1.4
Venezuela	1998	7.5	0.5	13.5	1.7

*Three states survey

Source: World Health Organization. *Anti-tuberculosis Drug Resistance in the World. Report No. 2.* Geneva: WHO; 1996. (WHO/CDS/TB/2000.278), and World Health Organization. *Anti-tuberculosis Drug Resistance in the World. Report No. 3.* Geneva: WHO (WHO/HTM/TB/2004.343).

THE DOTS STRATEGY IN THE AMERICAS

Calculations show that 78% of the Region's population was covered by the DOTS Strategy in 2003, though coverage levels differ among countries (Map 2).

Map 2 ◣ **DOTS Strategy population coverage, Region of the Americas, 2003.**

Source: World Health Organization. *Global Tuberculosis Control: Surveillance, Planning, Financing. WHO Report 2005.* Geneva: WHO; 2005. (WHO/HTM/TB/2005.349).

An analysis of the treatment cohort for new SS+ TB cases from 1995 to 2002 shows that throughout the period the percentages of cure were higher and the percentages of unevaluated cases lower under DOTS (Figures 4 and 5).

Figure 4 ◣ **Outcomes with DOTS treatment for new SS+ TB cases, Region of the Americas, 1995–2002.**

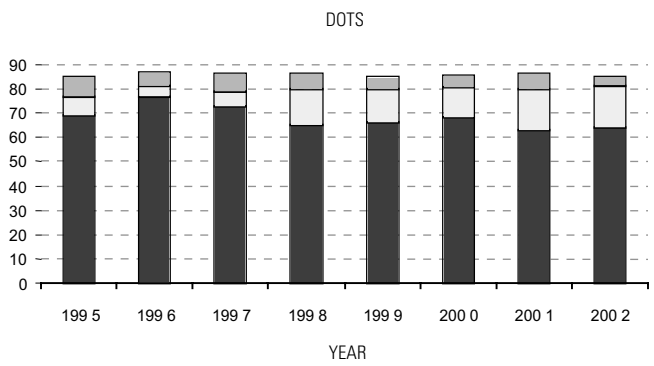
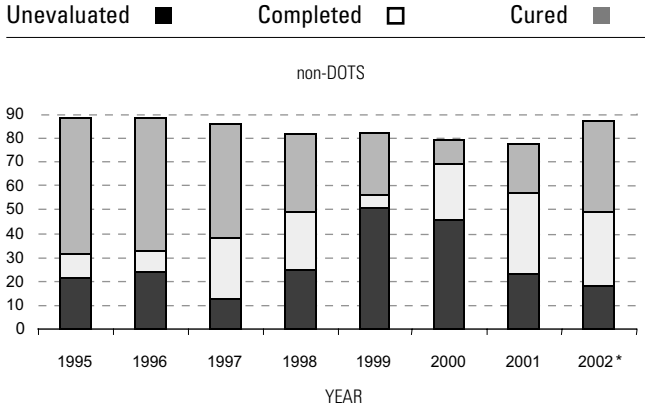


Figure 5 ◣ **Outcomes with non-DOTS treatment for new SS+ TB cases, Region of the Americas, 1995–2002.**



* Non-DOTS 2002 data reviewed by the Regional Program on Tuberculosis.
Source: World Health Organization, tuberculosis data collection forms, 1995–2002.

SCENARIOS FOR IMPLEMENTATION OF THE STRATEGIC PLAN

For purposes of analysis and intervention, the countries of the Region have been stratified according to four scenarios using operational and epidemiological criteria (Table 2). These criteria are the incidence of tuberculosis estimated by WHO and the DOTS Strategy coverage reported by the countries for 2003. On the basis of these two criteria, it will be possible to select those interventions that will be the most beneficial to the country for tuberculosis control.

Table 2 ◣ **Country stratification according to estimated tuberculosis incidence and DOTS coverage, Region of the Americas, 2003.**

SCENARIO 1 Estimated TB incidence below 25 per 100,000 population and DOTS coverage over 90%	**SCENARIO 2** Estimated TB incidence between 25 and 50 per 100,000 population and DOTS coverage over 90%	**SCENARIO 3** Estimated TB incidence over 50 per 100,000 population and DOTS coverage over 90%	**SCENARIO 4** Estimated TB incidence over 50 per 100,000 population and DOTS coverage below 75%
Canada	Argentina	Bolivia	Brazil
Chile	Belize	El Salvador Guatemala Honduras	Colombia
Costa Rica	Mexico	Nicaragua	Dominican Republic
Cuba	Panama	Peru	Ecuador
English-speaking Caribbean*	Venezuela		Guyana
French Territories**			Haiti
Jamaica			Suriname
Netherlands Antilles			Paraguay
Puerto Rico			
United States			
Uruguay			

*Countries of the English-speaking Caribbean with five or more estimated annual cases per 100,000 population: Bahamas, Barbados, Dominica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, and Trinidad and Tobago.

**Guadeloupe, Guyana, and Martinique.

SCENARIO 1
Countries with estimated TB incidence below 25 per 100,000 population and DOTS Strategy coverage over 90%

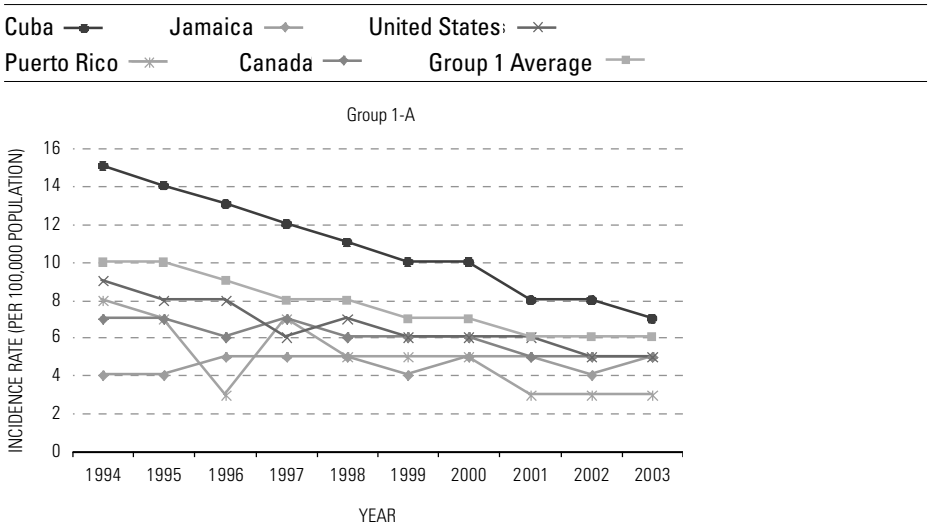
In the period between 1994 and 2003, the TB incidence rate declined 40% (from 10 in 1994 to 6 per 100,000 population in 2003), with the reduction mainly due to the United States, which accounted for 81% of the cases and 89% of the group's population.

This group has been subdivided into Group 1A, containing those countries with estimated incidence rates equal to or below 11 per 100,000 in 2003, and Group 1B, containing the three countries with rates between 12 and 25 per 100,000 inhabitants.

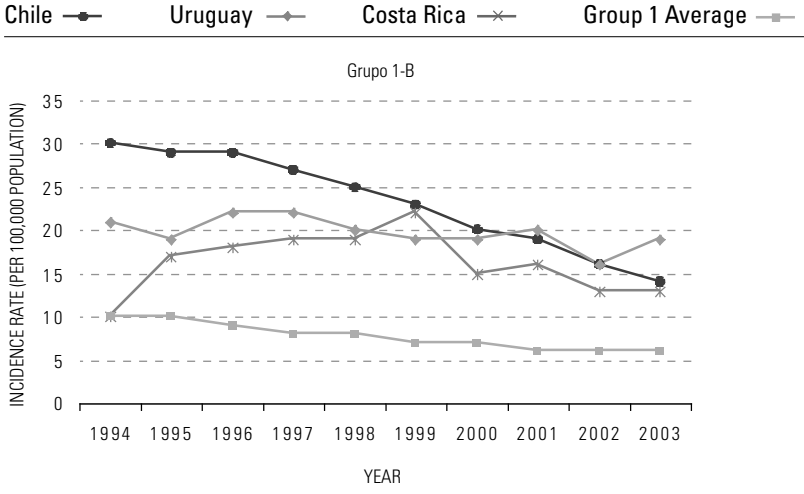
In Group 1A, four countries showed a downward trend—Canada, Cuba, Puerto Rico, and the United States. Jamaica showed a flat trend, probably due to problems with implementation of the DOTS Strategy.

In Group 1B, Chile and Costa Rica showed marked reductions. Uruguay did not show the decline in incidence that was expected by 2003, a situation that is attributable to TB/HIV coinfection.

Figure 6 ◣ **Reported tuberculosis incidence rate, 1994–2003, Scenario 1.**



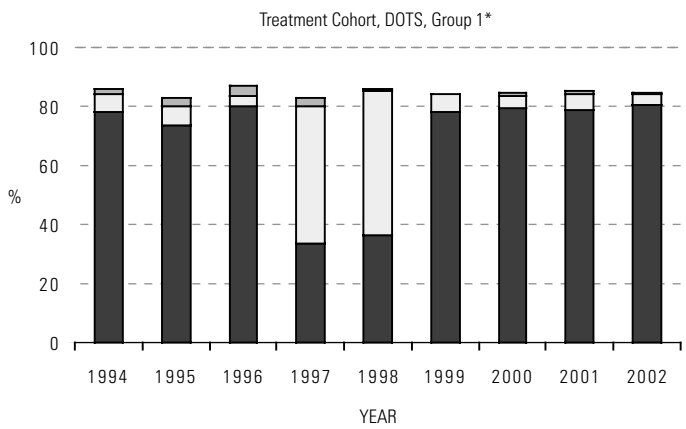
Reported tuberculosis incidence rate, 1994–2003, Scenario 1.



Source: World Health Organization, tuberculosis data collection forms, 1994–2003.

With regard to the status of TB operations, in the countries belonging to Group 1, excluding the United States and Canada, the treatment success rate under DOTS (Figure 7) was nearly 84% over the entire the period, with an 80% cure rate (microscopy-negative cases) for 2002, and only 0.5% unevaluated cases. These data are indicative of correct implementation of the strategy. By 2002, 91% of the cases from Group 1 were being treated under DOTS, representing nearly 4% of the cases under DOTS in the Region.

Figure 7 ◣ **Treatment outcomes for new SS+ tuberculosis cases under DOTS, Group 1*, 1994–2002.**

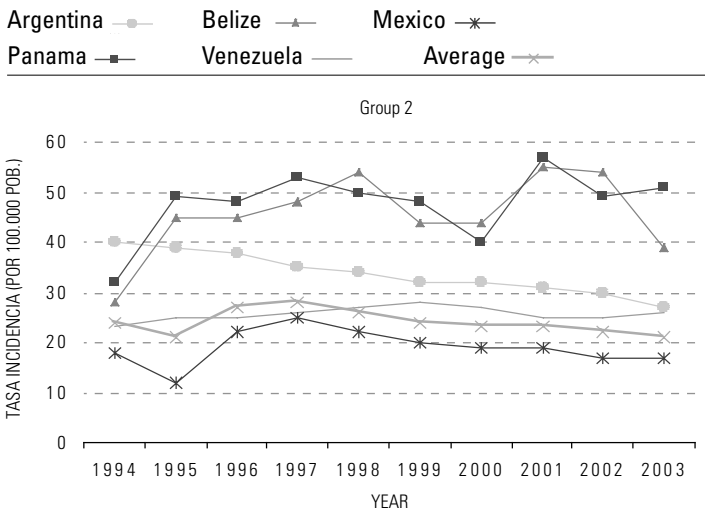


*United States and Canada excluded.
Source: World Health Organization, tuberculosis data collection forms, 1994–2003.

SCENARIO 2
Countries with estimated TB incidence between 25 and 50 per 100,000 population and DOTS Strategy coverage over 90%

Group 2 showed a reduction in TB incidence beginning in 1998, attributed to the impact of Mexico on the trend, which accounted for nearly 48% of total cases and 61% of the population in the group). Argentina has shown a steady downward trend since 1994, from 40 to 27 per 100,000 population by 2003. Venezuela's rates did not vary during the period. The other two countries, Belize and Panama, showed increases in their rates from 1994 to 1997, and wide swings beginning in 1998, reflecting problems in case detection and/or in the information system (Figure 8).

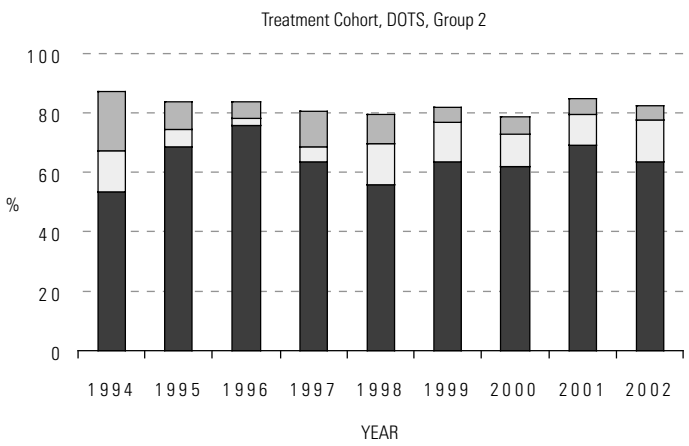
Figure 8 ◣ **Reported tuberculosis incidence rate, 1994–2003, Scenario 2.**



Source: World Health Organization, tuberculosis data collection forms, 1994–2003.

The percentage of successfully treated cases fluctuated between 1994 and 2002; it was 78% in 2002. Unevaluated cases varied from year to year, and were 3% in 2002 (Figure 9). Ninety-six percent of the Group 2 cases were being treated under DOTS, representing 27% of the cases under DOTS in the Region in 2002.

Figure 9 ◣ **Treatment outcomes for new SS+ tuberculosis cases under DOTS, Group 2*, 1994–2002.**



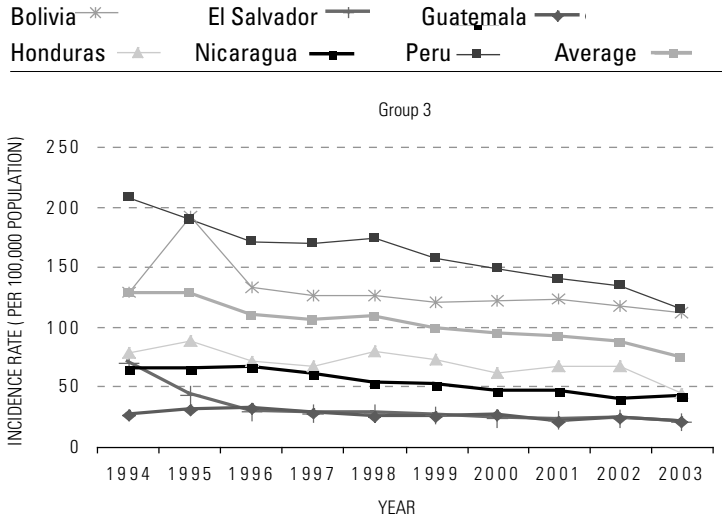
* Belize did not report data for 1996 or 1997.

Source: World Health Organization. *Global Tuberculosis Control* reports, 1997–2005.

SCENARIO 3
Countries with estimated TB incidence over 50 per 100,000 population and DOTS Strategy coverage over 90%

This group experienced substantial downward movement in the reported TB incidence rate, with a 28% reduction during the period. The reduction was due to falling rates in most of the countries (Figure 10), though the greatest contribution was from Peru, which reduced its incidence by 35% during the period.

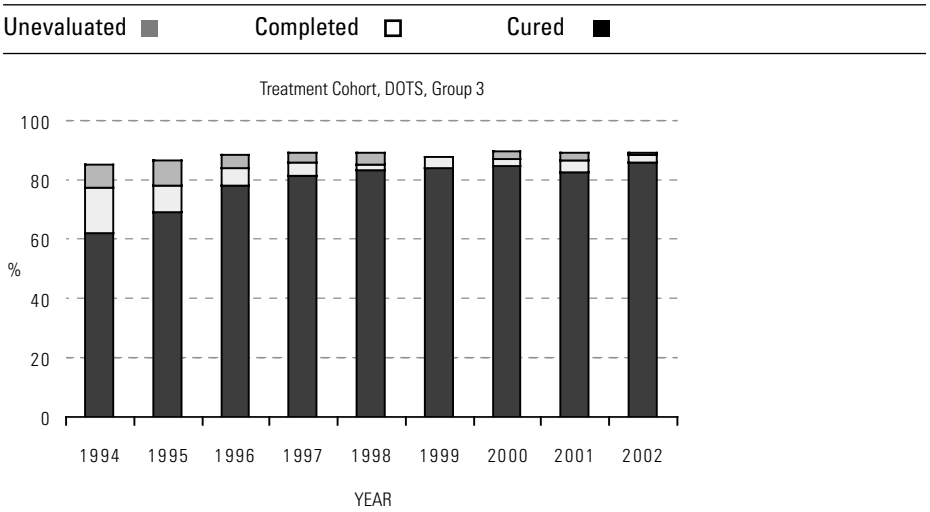
Figure 10 **Reported tuberculosis incidence rate, 1994–2003, Scenario 3.**



Source: World Health Organization, tuberculosis data collection forms, 1994–2003.

In 2002, 100% of patients were treated under DOTS, with a success rate of 85%. These countries contributed nearly 44% of the cases under DOTS in the Region (Figure 11).

Figure 11 **Treatment outcomes for new SS+ tuberculosis cases under DOTS, Group 3, 1994–2002.**



Source: World Health Organization, tuberculosis data collection forms, 1994–2002.

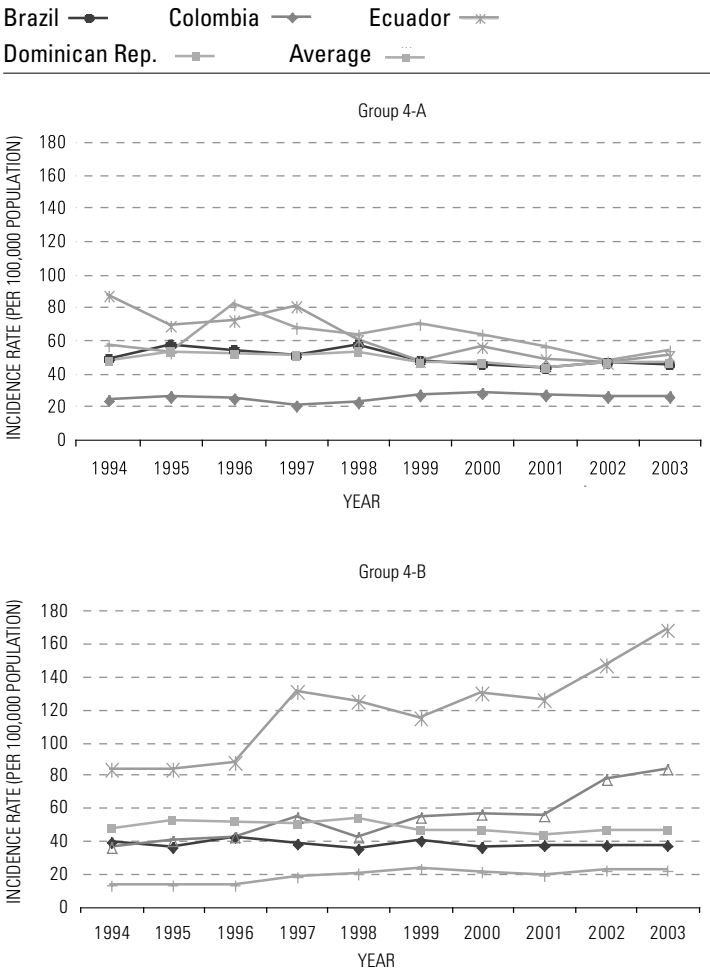
SCENARIO 4
Countries with estimated TB incidence over 50 per 100,000 population and DOTS Strategy coverage below 75%

The countries in this group have the common characteristic of late implementation and/or slow expansion of the DOTS Strategy; during the period under review, Suriname had not yet implemented it. The group average is influenced by the rates of Brazil, which accounts for 69% of the population and 67% of the group's reported cases.

This group was divided into two subgroups: Group 4A, which includes Brazil, Colombia, the Dominican Republic, and Ecuador, and Group 4B, which includes Guyana, Haiti, Paraguay, and Suriname. Group 4A showed a decline in reported incidence for the Dominican Republic and Ecuador, though this is related more to problems with case detection and/or the information system and does not represent a real decline in incidence. Brazil's and Colombia's reported incidence rates for the period remained constant due to slow expansion of the DOTS Strategy; coverage in 2003 was 34% and 19%, respectively.

In Group 4B, three countries showed an upward trend. Haiti had the highest rates in the Region, with a 100% increase between 1994 and 2003 (from 83 to 168 per 100,000 population), which is related to improved case detection, the increase in TB/HIV coinfection, and the socioeconomic conditions affecting the country. Guyana's incidence rate increased more than 100% during the same period (from 36 to 83 per 100,000 population), which is related to the HIV epidemic, poverty, and the incipient utilization of the DOTS Strategy (Figure 12).

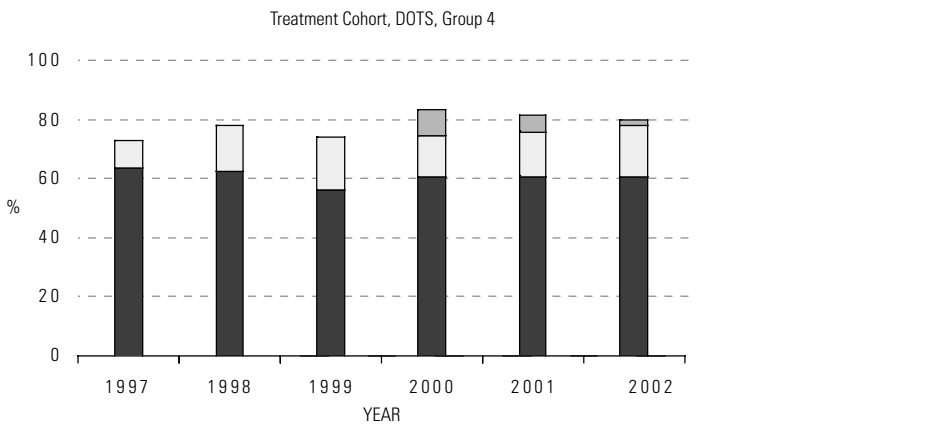
Figure 12 ◣ **Reported tuberculosis incidence rate, 1994–2003, Scenario 4.**



Source: World Health Organization, tuberculosis data collection forms, 1994–2003.

Only 23% of cases were treated under DOTS in all of group 4, and better treatment success rates were seen under DOTS than non-DOTS, primarily at the expense of unevaluated cases. In 2002, treatment success in DOTS areas was 79%, with only 2% of cases unevaluated (Figure 13). Group 4 accounted for nearly 20% of cases under DOTS and 98% of non-DOTS cases in the Region in 2002.

Figure 13 ◣ **Treatment outcomes for new SS+ tuberculosis cases under DOTS, Group 4, 1996–2002.**



Source: World Health Organization, tuberculosis data collection forms, 1994–2003.

THE REGION AND THE MILLENNIUM DEVELOPMENT GOALS

Goal 6 of the Millennium Development Goals establishes Target 8, which seeks to "have halted by 2015 and begun to reverse the incidence of malaria and other major diseases." **Goal 6** of the MDGs defines implementation and impact indicators for tuberculosis.

Implementation Indicators

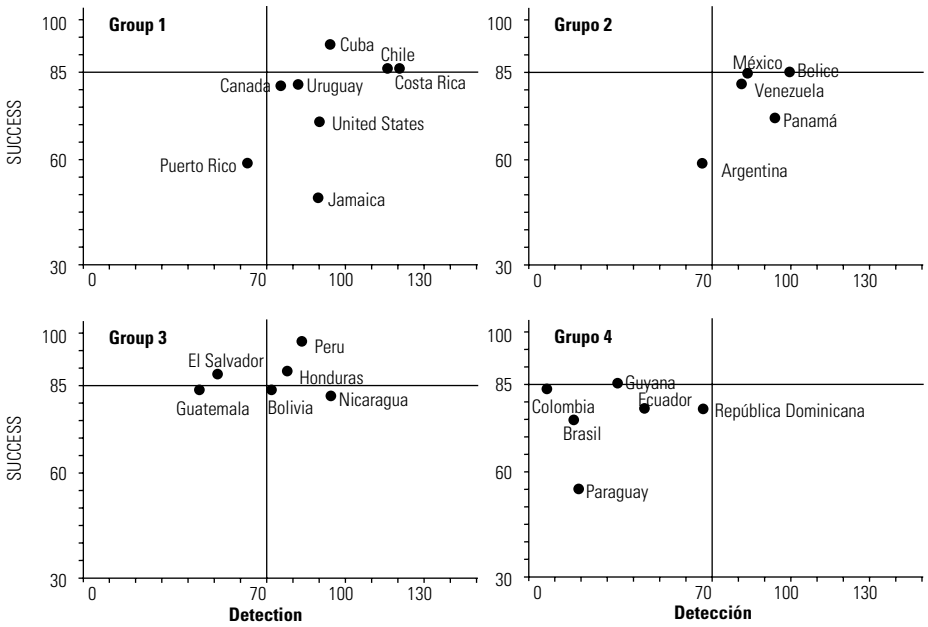
Indicator 24:

- *Detect 70% of estimated SS+ TB cases, and*
- *Successfully treat 85% of these cases under DOTS by 2005.*

Average tuberculosis case detection under DOTS was 50% in the Region by 2003 and treatment success for the 2002 cohort was 81%. It was estimated that by 2005, nearly 70% of the cases would be detected and 85% of them would be successfully treated.

3 *Global Tuberculosis control: surveillance, planning, financing. WHO report 2005. Geneva, World Health Organization (WHO/HTM/TB/2005.349)*

Figure 14 ◣ **Comparison of case detection rates (2003) and treatment success rates (2002) under DOTS, by Scenarios.**



Source: World Health Organization, tuberculosis data collection forms, 1994–2002.

B) Impact Indicators

According to WHO estimates, TB incidence in the Americas has followed a downward trend since 1990, from 66 cases per 100,000 population that year to 43 per 100,000 population in 2003. However, this reduction is not uniform across the Region; it is smaller in those countries that recently began to implement the DOTS Strategy.

Indicador #23: ***Halve tuberculosis prevalence and mortality with respect to 1990 figures by 2015***

- *The Region's status as of 2003 was as follows:*

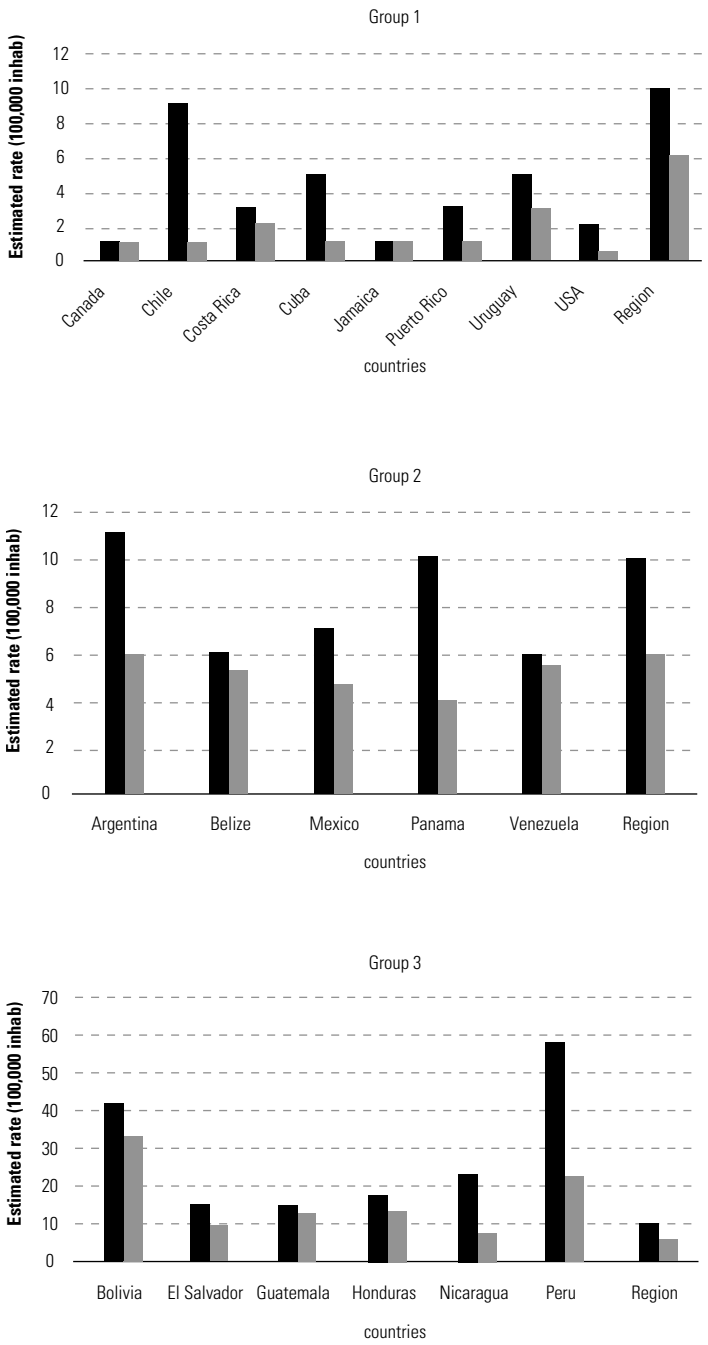
	Baseline (1990)	2003	Target (2015)
TB prevalence*	100	58	50
TB mortality*	10	6	5
(* Rates per 100,000 population (WHO estimates[3])			

The Region of the Americas is close to reaching these indicators; however, current outcomes have essentially been the achievements of countries with high or upper-middle income and/or with successful, long-standing NTPs and a sustained reduction in their TB indicators. The achievement of these indicators by 2015 will depend on sustained reductions in them by the countries with middle-low or low income and with a high prevalence or burden of tuberculosis, and on TB/HIV-AIDS interprogram coordination.

Tuberculosis Mortality

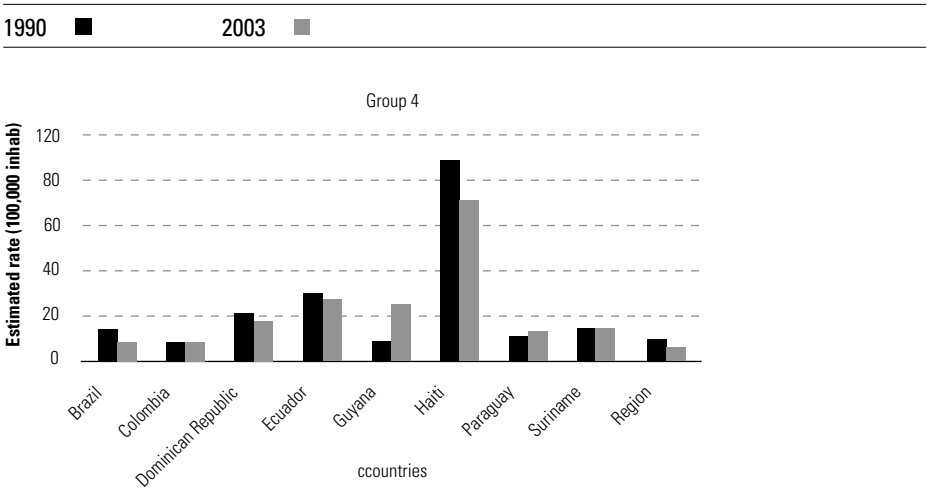
Tuberculosis mortality must be monitored so that progress toward the indicators for the MDGs can be measured. Since mortality information was not available from all the countries of the Region, this analysis was carried out using mortality rates estimated by WHO.

Figure 14 ◣ **Estimated tuberculosis mortality rates, Region of the Americas, 1990 and 2003.**



Source: World Health Organization. *Global Tuberculosis Control: Surveillance, Planning, Financing.* Geneva: WHO, 2005. (WHO/HTM/TB/2005.349).

Figure 15 **Estimated tuberculosis mortality rates, Region of the Americas, 1990 and 2003.**



Source: World Health Organization. *Global Tuberculosis Control: Surveillance, Planning, Financing.* Geneva: WHO, 2005. (WHO/HTM/TB/2005.349).

In conclusion, these are the epidemiological and operational bases guiding the interventions detailed in the Regional Plan, whose ultimate objective is to support the countries of the Region in their national strategic planning processes aimed at reaching the Millennium Development Goals.

III. Justification for the Regional Plan

The current challenges facing TB control in the countries of the Region are likely greater than they were a decade ago, due to:

A) Increased inequity in income distribution, increased poverty, exclusion, and political instability in poorer countries; and the occurrence of natural disasters and epidemic and endemic communicable diseases other than TB that force governments to divert resources toward mitigating these conditions and away from TB control and other programs. These conditions are reflected in:

- Lack of access to health care by population groups vulnerable to TB, due to economic, geographic, and/or cultural barriers, or simply inexistent or weak health facilities in poor countries;
- Lack of political will regarding tuberculosis control at different levels;
- Lack of or insufficient financing, which leads to such gaps in TB control as the unavailability of supplies and drugs and can endanger fundamental activities;
- Staffing crises due to constant turnover, job instability, and/or the lack of human resource policies;
- DOTS coverage below 75% in a group of countries with a high disease burden, and poor quality in its application in some countries with coverage above 90%;
- Insufficient development, and insufficient integration into NTPs, of laboratory networks;
- Health sector reform that decentralizes and weakens NTPs;
- Little or no involvement by other health care providers from the public and private sectors; and
- Lack of involvement in TB control by the people affected by the disease and the community in general.

B) Rapid HIV transmission, the subsequent problem of TB/HIV coinfection, and the presence of MDR-TB in all the countries of the Americas.

In addition, the Plan gives response to three commitments already made.

a) Commitment by all the countries of the Region to achieve the MDGs (Goal 6 and Target 8) to decrease TB incidence, detect 70% of infectious cases and cure 85% of these cases under DOTS (WHO, 2005), and to halve tuberculosis prevalence and mortality by 2015.
b) Fulfillment of Directing Council Resolution CD46.R12 to intensify TB control in each and every one of the countries of the Americas in order to meet the MDGs.
c) Implementation of the new WHO Stop TB Strategy (Annex 1), aimed at consolidating quality application of the DOTS Strategy in the world, comprehensive care for TB associated with HIV and MDR-TB, strengthened health systems, patient and community empowerment, and operations research and research on new tools such as vaccines and drugs. These elements are embodied in the Strategic Lines of the Regional Plan.

All this demands the preparation and implementation of a long-range strategic plan that makes it possible to confront these challenges, continually reevaluate them, and measure the progress of the plan's implementation and impact until proposed targets are met.

IV. Vision, mission, objectives, and targets of the plan and strategic lines of work

Vision	The Americas free of tuberculosis.
Mission	Ensure that each TB patient has full access to quality diagnosis and treatment, in order to decrease the social, economic, and inequity burden inflicted by TB.
General Objective	The countries of the Region reduce the incidence, prevalence, and mortality of TB, implementing the Stop TB Strategy.
Principal Targets	The Region reports more than 70% of new SS+ cases and cures 85% of those cases by 2005 (Resolution WHA 44.8). All the countries of the Region reduce the incidence of TB and decrease mortality and prevalence by 50% by 2015 with respect to 1990 figures (MGD targets).
Specific Objectives	
Objective 1	Ensure health care services for every TB patient that include quality implementation of the DOTS Strategy.
	Target • 100% of the countries of the Region provide quality implementation of the DOTS Strategy in all governmental health services by 2007.
Objective 2	Decrease the incidence of TB and HIV in populations affected by both infections.
	Target • 100% of the countries of the Region institute a TB/HIV epidemiological surveillance system in accordance with their epidemiological conditions and engage in collaborative activities by 2015.
Objective 3	Prevent and control MDR-TB within the framework of the DOTS Strategy.
	Target • 100% of the countries engage in integrated management of MDR-TB within the DOTS Strategy by 2015.
Objective 4	Guarantee timely, quality diagnosis and bacteriological monitoring through strengthened laboratory networks.
	Targets • 100% of the TB laboratory networks are operationally integrated into the NTPs and observe WHO standards by 2015. • 100% of the countries systematically use culture as the routine method for case diagnosis and follow-up by 2010. • 100% of the countries of the Region conduct MDR-TB surveillance routinely for initial treatment failures, and periodically through national studies in selected countries, by 2010. In selected countries, second-line drugs will be included surveillance.
Objective 5	Involve all health care providers (public, nongovernmental, and private) in TB control.
	Target • 100% of the countries of the Region systematically involve all relevant health care providers in TB control by 2015.

Objective 6	Reduce stigma and discrimination toward TB patients and improve their access to DOTS services with support from advocacy, communication, and social mobilization (ACSM) strategies and participation of affected persons.
	Targets • 100% of the countries implement ACSM strategies for TB by 2015 and integrate the associations of affected persons in control activities.
Objective 7	Strengthen management of the NTPs through human resource development (HRD) strategies that form an integral part of the NTP national plans.
	Target • 100% of the countries have tuberculosis HRD programs by 2015.
Objective 8	Develop and/or strengthen the research capacity of NTPs.
	Target • 80% of the countries of the Region systematically engage in operations, epidemiological, and/or clinical research as part of the NTPs' routine activities.

Strategic Lines of Work	
Strategic Line 1	Expand and/or strengthen the DOTS Strategy, ensuring its quality application (Objective 1).
Strategic Line 2	Implement and/or strengthen: . TB and HIV/AIDS interprogram collaborative activities; . MDR-TB prevention and control activities; and . Community strategies for neglected populations, e.g., indigenous populations, prisoners, periurban neglected populations, etc. (Objectives 2 and 3).
Strategic Line 3	Strengthen the health system, emphasizing primary care, a comprehensive approach to respiratory diseases (Practical Approach to Lung Health [PAL] Strategy), the laboratory network, and the development of TB human resource policies (Objectives 4 and 7).
Strategic Line 4	Improve the population's access to TB diagnosis and treatment through the inclusion of all health care providers, both public and private (Objective 5).
Strategic Line 5	Empower affected persons and the community, and implement ACSM (Objective 6).
Strategic Line 6	Include operations, clinical, and epidemiological research in national TB control program plans (Objective 8).

V. Strategic lines of work

5.1 STRATEGIC LINE 1

Expand and/or strengthen the DOTS Strategy, ensuring quality, in all countries of the Region.

The implementation and subsequent expansion of the DOTS Strategy is the first step that a country should take in tuberculosis control.

The DOTS Strategy is composed of five elements, which should be tackled with equal emphasis:

1. Sustained governmental commitment—reflected in long-term planning, adequate human resources, and expanded and sustainable financing—to reach the targets set by the MDGs.
2. Case detection through bacteriological testing (sputum-smear microscopy as the first option, followed by culture and susceptibility and resistance testing, if necessary), strengthening of laboratory networks through quality control to facilitate the detection of sputum-smear positive, sputum-smear negative, and tuberculosis-drug-resistant cases.
3. Standardized treatment, under proper case management conditions, including directly observed treatment to reduce the risk of acquiring drug resistance, and support of patients to increase adherence to treatment and possibility of cure.
4. An effective and regular quality drug supply system, with improved drug management capacity, and the offer of free treatment for patients.
5. An efficient monitoring system for program supervision and evaluation that includes evaluation of treatment by cohorts and measurement of impact.

The epidemiologically and operationally heterogeneous conditions in the countries require the implementation of differentiated activities for the expansion, consolidation, and/or strengthening of DOTS as a first step, in order to move on to elimination strategies (see Recommended Country-level Strategies and Activities, by Scenario).

Initiatives to Eliminate Tuberculosis as a Public Health Problem

This is recommended in countries with low TB prevalence and 100% quality DOTS Strategy coverage. Countries in the elimination phase should reach a rate of less than 5 cases per 100,000 population for all forms of TB, as the result of a deliberate control effort and long-term, sustained intervention measures.

The Working Group on Low-Tuberculosis Prevalence-Tuberculosis Countries in the Region[4] proposes three stages, with five phases of action to attain the elimination of TB as a public health problem, with a duration consonant with each country's epidemiological situation and resources.

4 *Third Subregional Meeting of Low-Tuberculosis-Prevalence Countries (Cuba, Chile, Costa Rica, and Uruguay), Santiago de Chile, 2003.*

Stages and phases	Epidemiological targets (incidence for all forms of TB)
Stage 1 Phase 1: Advanced control	20 cases per 100,000 population
Stage 2: Pre-elimination Phase 2: Incipient pre-elimination Phase 3: Progressive pre-elimination Phase 4: Advanced pre-elimination	19–15 cases per 100,000 population 14–10 cases per 100,000 population 9–5 cases per 100,000 population
Stage 3 Phase 5: Elimination	<5 cases per 100,000 population

The strategies to be gradually implemented will include the strengthening of DOTS, and the rigorous application of the six elements of the Stop TB Strategy, clearly defining the risk groups and the appropriate interventions for each.

Initiative to Eliminate Tuberculosis as a Disease This is recommended in high-income countries with a low incidence rate and 100% DOTS coverage in which the intention is to eliminate TB (understood as reaching 1 case per 1,000,000 population for all forms of TB).

Recommended Country-level Strategies and Activities, by Scenario

The actions designed to implement, expand, and/or strengthen the DOTS Strategy will be related to its degree of development and to the country's epidemiological status, according to which the countries have been stratified by four scenarios (Table 2).

The following actions are recommended as part of the strategies and activities for all countries, regardless of their scenario:

- Obtain and/or maintain ongoing political commitment at different levels through advocacy activities involving different sectors of society
- Integrate technical, financial, and social partners into control activities through the formation of interagency Stop TB committees—including partners who traditionally work in TB as well as new ones such as scientific societies, specialist physicians, networks of DOTS nursing

and allied health professionals, community organizations, associations of affected persons, and private service institutions—to successfully implement long-term, sustainable, quality DOTS.

- Strengthen the TB epidemiological surveillance system and integrate it into the countries' national epidemiological surveillance systems.
- Promote, technically support, and evaluate border, binational, or multinational cooperation agreements for TB management.
- Prepare and implement projects to increase the flow of economic resources.

Scenario 1: Countries with low estimated TB incidence and DOTS coverage over 90%. %. This scenario includes Canada, Chile, Costa Rica, Cuba, Jamaica, Puerto Rico, the United States, Uruguay, the English-speaking Caribbean, the French Territories, and the Netherlands Antilles. [Cuba and Jamaica are low-middle income countries; countries of the English-speaking Caribbean, Chile, Costa Rica, and Uruguay are high-middle income; and the rest are high income.

The strategies and principal activities of the countries and territories in this group should focus on:

Preparing action plans to eliminate TB as a public health problem that include:

- Having political commitment and social and partner mobilization for this initiative;
- Targeting and intensifying actions in vulnerable populations;
- Geopolitically stratifying the burden of disease and designing stratum-specific intervention strategies;
- Implementing public-private mix (PPM) and PAL initiatives; and
- Conducting operations and epidemiological research in order to validate intervention strategies, programming parameters, evaluation indicators, and surveillance.

Scenario 2: Countries with medium estimated TB incidence and DOTS coverage over 90%. This scenario includes Argentina, Belize, Mexico, Panama, and Venezuela; all are high-middle income countries.

Scenario 3: Countries with high TB incidence and DOTS coverage over 90%. This scenario includes Bolivia, El Salvador, Guatemala, Honduras, Nicaragua, and Peru. These countries are classified as low-middle income, except Nicaragua, which is low income. The countries in this group have political, economic, and infrastructural limitations that affect TB control efforts.

The strategies and activities for Scenarios 2 and 3 should focus on:

- Preparing long-range national plans aimed at reaching the MDGs and that include the implementation of strategies to support and consolidate the DOTS Strategy:
  - Maintain ongoing supervision and periodic monitoring and evaluation; and
  - Intensify actions with particularly high-risk populations (indigenous populations, prisoners, the poor in large cities, and migrants) and involve the community in order to improve access and adherence to treatment by neglected populations.

Scenario 4: Countries with high TB incidence and DOTS coverage below 70%. This scenario includes Brazil, Colombia, the Dominican Republic, Ecuador, Guyana, Haiti, Paraguay, and Suriname. All are low-middle income countries, except Haiti, which is low income.

The principal strategies and activities for Scenario 4 should focus on:

- Preparing and implementing short-term DOTS Strategy expansion plans in accordance with country conditions (infrastructure, health system reform, geopolitical structure, economic resources, etc.) that include:
  - Increased training, supervision, monitoring, and evaluation activities; and
  - Integration of specialist physicians into program activities and the creation of professional networks (e.g., nurses).
- Preparing long-range national plans designed to sustain and consolidate the DOTS Strategy and reach the MDGs.

Regional-level Activities

- Officially form the Interagency Stop TB Committee for the Region of the Americas and encourage the formation and consolidation of country-level Stop TB committees.
- Form the Regional Technical Advisory Group and subcommittees on TB/HIV, MDR-TB, and ACSM.
- Advise on:
  - The preparation of plans for expanding the Strategy to the countries under Scenario 4.
  - The preparation of national plans aimed at strengthening TB control in order to meet the MDGs.
  - The implementation of the different initiatives in accordance with the countries and scenario.
  - The preparation of projects (to be funded by the Global Fund to Fight AIDS, Tuberculosis, and Malaria [GFATM], Fidelis, Green Light Committee, other foundations, etc.) and **assist in** their implementation.
  - The preparation of border, binational, and/or multinational cooperation agreements through the provision of technical support to countries with heavy migration.
  - The purchase of supplies and tuberculosis drugs.
- Monitor and evaluate the application, expansion, and quality of the DOTS Strategy in the countries in accordance with the stratification and with regard to fulfillment of the MDGs, with emphasis on the PAHO's priority countries.
- Carry out visits to advocate at the political level for the maintenance of TB as a health policy priority.
- Facilitate and promote regional and national networks of tuberculosis control health professionals (networks of DOTS nursing or allied health professionals, specialist physicians, etc.).

5.2. STRATEGIC LINE 2

Implement and/or strengthen TB and HIV/AIDS interprogrammatic collaborative activities, MDR-TB prevention and control activities, and community strategies for neglected populations (community DOTS) in all countries of the Region.

5.2.1. Tuberculosis and HIV/AIDS Interprogram Collaborative Activities

The growing HIV epidemic represents a great challenge for the NTPs, which are seeing an increase in HIV infection among TB cases and the appearance of new TB cases among persons infected with HIV. This is compromising health system performance and NTP efficiency due to increased TB incidence, case-fatality, treatment abandonment, and challenges for the comprehensive treatment of both diseases.

This situation has created the need for collaborative activities among the NTPs and the national HIV/AIDS programs, within the WHO policy framework, aimed at:

- *Establishing collaboration mechanisms,* with the formation of coordinating teams between the two programs at different levels, the implementation or strengthening of an epidemiological surveillance system for HIV coinfection in TB patients, and the preparation and execution of joint TB/HIV activity plans that include monitoring and evaluation activities.
- *Decreasing the TB burden in people living with HIV,* through active TB case detection and treatment, and the introduction of preventive treatment among people who are HIV+, and infection control measures for health personnel and confined populations at high risk for contracting both infections, such as prisoners, army personnel, police, etc.
- *Decreasing the burden of HIV in patients with TB* by offering every TB patient counseling, voluntary HIV testing, and HIV prevention methods, and by guaranteeing access to antiretroviral therapy, preventive therapy with cotrimoxazole, and long-term care and emotional support for TB patients infected with HIV (following guidelines on comprehensive care for persons living with TB/HIV coinfection in Latin America and the Caribbean).

The heterogeneity of the HIV epidemic among the countries of the Region requires that the interventions be grouped according to the status of the HIV epidemic and the TB burden in order to identify immediate and medium-term actions adapted to the different epidemiological scenarios (Table 3).

Table 3 ◣ **Classification of the countries according to type of HIV epidemic* and level of tuberculosis incidence, selected countries, Region of the Americas, 2003.**

Generalized HIV epidemic		**Concentrated or incipient HIV epidemic**	
High TB incidence	*Low or medium TB incidence*	*High TB incidence*	*Low or medium TB incidence*
Belize	Bahamas	Bolivia	Argentina
Dominican Republic	Barbados	Brazil	Costa Rica
Haiti	Jamaica	El Salvador	Chile
Honduras	Trinidad and Tobago	Ecuador	Cuba
Guatemala		Mexico	Colombia
Guyana		Nicaragua	Panama Uruguay
Suriname		Paraguay	Venezuela
		Peru	

*Generalized HIV Epidemic: HIV prevalence >1% in pregnant women; Concentrated HIV Epidemic: HIV prevalence >5% in at least one defined subpopulation and <1% in pregnant women; Incipient Epidemic: HIV prevalence <5% in any subpopulation.

COUNTRY-LEVEL STRATEGIES AND ACTIVITIES ACCORDING TO TYPE OF HIV EPIDEMIC

1. Generalized HIV Epidemic

With high TB incidence rates (over 50 cases per 100,000 population): This group is made up of seven countries, of which three report total DOTS coverage, three are in the DOTS Strategy expansion stage, and one is in the implementation stage. All have immediate antiretroviral therapy available and economic resources for TB/HIV collaborative actions (see Annex 3).

With low or medium TB incidence rates (under 50 cases per 100,000 population): This group is made up of four countries of the English-speaking Caribbean that are experiencing difficulties with the implementation of the DOTS Strategy. However, all had HIV/AIDS projects (multicountry projects, exception for Jamaica) approved by GFATM by 2005 (Annex 3), giving them the opportunity to strengthen TB/HIV collaborative activities and DOTS Strategy implementation. The strategies and activities that should be carried out in both groups include:

- Establishing interprogram collaboration mechanisms aimed at:
  - Forming working groups and expert committees on TB/HIV management;

- Reviewing and/or updating NTP technical standards, including management of TB/HIV coinfection; and
- Establishing and/or strengthening the epidemiological surveillance system through data collection on the routine care of TB patients (HIV counseling and voluntary testing in every TB case).

- Decreasing the TB burden in patients living with HIV by:
  - Intensifying case-finding for tuberculosis in PLWHA; and
  - Introducing preventive treatment with isoniazid.
- Decreasing the HIV burden in TB patients by:
  - Providing counseling and voluntary HIV testing for TB patients;
  - Promoting HIV prevention among TB patients;
  - Introducing prevention of opportunistic infections in coinfected people;
  - Ensuring comprehensive care of PLWHA; and
  - Introducing and/or strengthening antiretroviral therapy.

2. Concentrated or Incipient HIV Epidemic

The countries with concentrated or incipient HIV epidemics are those with total DOTS coverage, except Brazil, Colombia, Ecuador, and Paraguay, which are in the expansion stage. All of these countries have antiretroviral treatment, though some have limitations on access to treatment.

The general recommendations that these countries should implement include:

- Establishing interprogram collaboration mechanisms:
  - Forming working groups and expert committees on TB/HIV management;
  - Reviewing and/or updating NTP technical standards, including management of TB/HIV coinfection;
  - Decreasing the burden of TB in PLWHA with specific actions targeting risk groups (men who have sex with men, drug users, sex workers, and confined populations) and in areas in which the prevalence in pregnant women is higher than the national average.

- Establishing and/or strengthening the epidemiological surveillance system, based on:
  - Data collection on the routine care of TB patients (HIV counseling and voluntary testing in every TB case);
  - Establishment of sentinel surveillance and/or periodic prevalence surveys in countries that cannot conduct routine surveillance.

The rest of the activities geared toward decreasing the burden of TB in patients living with HIV and decreasing the HIV burden in TB patients will be the same as those for countries with a generalized HIV epidemic.

✤ *Regional-level Activities*

- Develop a joint HIV/AIDS and TB Regional activities plan in PAHO/WDC to strengthen interprogram cooperation.
- Form the Regional Subcommittee of TB/HIV Experts.
- Advocate at high political levels, with Regional Committee participation, to prioritize TB/HIV control in countries with generalized HIV epidemics.
- Facilitate the training and development of Regional TB/HIV experts and the training of NTP and HIV/AIDS heads in interprogram collaborative activities.
- In close coordination with the Regional HIV/AIDS Program:
  - Advise on the implementation and/or strengthening of the coinfection information and epidemiological surveillance system and on the execution of sentinel and prevalence studies;
  - Implement integrated TB/HIV management in primary and community care (counseling TB patients for HIV test consent, HIV testing, CD4 count, antiretroviral treatment, opportunistic infection prophylaxis, and community care for patients) through the preparation and adaptation of guidelines for TB/HIV counseling and for antiretroviral and TB treatment;
  - Advise NTPs on the preparation of an ACSM strategy that addresses the TB/HIV problem.
- Achieve consensus on standards of diagnosis of tuberculosis infection and disease in people living with HIV.
- Contribute to strengthening laboratory network capacity in diagnostic techniques and typing of mycobacterium strains.
- Coordinate and facilitate the mobilization of economic resources with the partners.
- Monitor and evaluate interprogram collaborative activities and their impact through seminars and field visits in coordination with the Regional HIV/AIDS Program.

5.2.2 Implement and/or Strengthen MDR-TB Prevention and Control Activities in All the Countries of the Region, with Emphasis on Countries with High Percentages of MDR-TB

In response to the threat posed by MDR-TB[5], in 1999 WHO, under the auspices of Stop TB, formed the Working Group on DOTS-Plus for MDR-TB and created the Green Light Committee (GLC) to facilitate access to low-cost, second-line drugs of certified quality and to provide technical assistance to guarantee their rational use in middle- or low-income countries. Based on the evidence of its feasibility, effectiveness, and cost-effectiveness, WHO has incorporated MDR-TB management into the DOTS Strategy.

The Regional Program on Tuberculosis, following WHO directives, has promoted implementation of the integrated management of MDR-TB cases in the countries, recommending the application of the following strategies and/or country activities:

5 *By 2000, there were an estimated 273,000 new MDR-TB cases worldwide, while MDR-TB among previously treated patients could be four to five times the percentages of primary MDR-TB. In order to measure this phenomenon, WHO and the International Union Against Tuberculosis and Lung Disease (IUATLD) have thus far conducted three worldwide surveys to measure MDR-TB prevalence and trends.*

Tabla 4 ◣ **Country grouping according to primary (initial) MDR-TB prevalence, selected countries*, Region of the Americas, 2004.**

MDR-TB 3% or higher	MDR-TB between 1% and 3%	MDR-TB below 1%
Dominican Republic	Argentina	Canada
Ecuador	Bolivia	Chile
Guatemala	Brazil	Cuba
Peru	Colombia	El Salvador
	Honduras	Uruguay
	Mexico	Venezuela
	Nicaragua	
	Paraguay	
	Puerto Rico	
	United States	

* Data on MDR-TB is not available for Costa Rica, CAREC Member countries, Haiti, Panama, English-speaking Caribbean, French Territories, or Netherlands Antilles.

The Regional Program on Tuberculosis, following WHO directives, has promoted implementation of the integrated management of MDR-TB cases in the countries, recommending the application of the following strategies and/or country activities:

- Strengthening of the DOTS Strategy (Line 1).
- Preparation, implementation, and expansion of MDR-TB management projects in areas where the DOTS Strategy is being used with good results.
- Identification and correction of the causes of multidrug resistance in the countries by:
  - Guaranteeing drug quality;
  - Strengthening the laboratories and drug quality control procedures;
  - Promoting mechanisms that limit the indiscriminate sale of first- and second-line drugs;
  - Promoting the use of fixed-dose drug combinations; and
  - Using the supply mechanism for second-line drugs and the technical support of the GLC.
- Strengthening of the MDR-TB surveillance system by:
  - Systematically monitoring drug resistance in all cases of Category 1 treatment failure; and
  - Conducting national studies of primary and secondary resistance to evaluate patterns of MDR-TB.

✤ *Country-level Activities According to Primary (Initial) MDR-TB Classification*

- Countries with **primary MDR-TB below 1%** are encouraged to use GLC's second-line drug supply mechanism (quality, low-cost drugs; technical support for implementing and monitoring the strategy) and adapt and/or tailor control measures in accordance with WHO MDR-TB management guidelines.

- Countries with **primary MDR-TB between 1% and 3%** are encouraged to progressively implement susceptibility testing for all previously treated cases that begin retreatment.
- Countries with **primary MDR-TB of 3% or higher** are encouraged to progressively implement susceptibility testing for all previously treated cases that begin retreatment and for all new SS+ cases that continue to be SS+ at the second month of treatment. In cases of primary MDR-TB, it is recommended that specific studies of resistance to second-line drugs be conducted.

✤ *Regional Support for Strategies and Activities for Countries Currently Lacking MDR-TB Data*

This group includes Guyana, Haiti, Suriname (which have high TB incidence rates), and Costa Rica, Panama, and the rest of the CAREC countries (which have low incidence rates). The strategies and activities that should be carried out include:

Conducting tuberculosis-drug-resistance surveillance studies by:

- Setting up culture and susceptibility testing for first-line drugs in all the countries that meet the WHO criteria; and
- Preparing protocols and timetables for studies to evaluate primary and secondary resistance.

✤ *Regional-level Activities*

- Advocate with the countries' health authorities and donors for their support for MDR-TB management as part of DOTS.
- Create a Regional subcommittee of MDR-TB control experts in order to give technical assistance to the countries for MDR-TB project design, implementation, monitoring, and expansion as part of the DOTS Strategy. [6]
- Train Regional experts on the management of MDR-TB as part of the DOTS Strategy.
- Facilitate the inclusion of MDR-TB treatment in countries or areas of countries with DOTS. For this purpose, emphasis is put on the importance of meeting the requirements described in the GLC approval process.
- Through the Supranational Reference Laboratories (SRLs) and Collaborating Centers (CCs), provide technology transfer and logistical support for timely, reliable diagnosis and monitoring of MDR-TB patients.
- Advise on the implementation or strengthening of MDR-TB surveillance systems.
- Advise on, facilitate, and channel the purchase of second-line drugs through GLC.
- Promote and advise on the prevention and control of the MDR-TB transmission, especially in hospitals that focus on care of these patients, in prisons, and in neglected populations.
- Encourage the countries to seek technical support from GLC not only for the purchase of drugs, but also for advisory assistance integral to the implementation of this strategic line.

6 *As of June 2005, GLC had approved nine MDR-TB projects in the following countries: Bolivia, Costa Rica, the Dominican Republic, El Salvador, Haiti, Honduras, Mexico, Nicaragua, and Peru. For 2006, the approval of two new projects in Ecuador and Paraguay is expected, as well as the expansion of existing projects.*

- Provide for courses on MDR-TB for the national teams, with emphasis on the MDR-TB management guidelines in countries that are implementing MDR projects and initiatives, and encourage their utilization nationwide.

5.2.3 Implement and/or Strengthen Community Strategies for Neglected Populations (Community-based TB control, or Community DOTS) in All the Countries of the Region.

The Regional Program on Tuberculosis promotes equity and favorable policies for neglected and poor populations[7] based on TB prevention and control activities (DOTS Strategy), and specific approaches to covering the diagnostic and treatment gaps affecting these populations and involving the community in prevention and control activities. These measures will help decrease TB prevalence among the poor and as well as poverty in the countries.

The Region adheres to the WHO recommendation for addressing TB in poor populations and will support the countries in its implementation through the following steps:

Step 1. Identify poor and vulnerable groups.
Step 2. Determine the barriers that impede access by vulnerable groups to tuberculosis diagnosis and treatment services.
Step 3. Identify and prioritize actions or interventions to address these barriers.
Step 4. Review the situations and population groups that require special attention.
Step 5. Explore opportunities for obtaining additional resources.
Step 6. Evaluate the impact of measures on behalf of the poor.

✤ *Country-level Activities*

All the countries of the Region have pockets of neglected and poor populations where TB incidence is several times higher than the national rate. Accordingly, during the stages to consolidate and sustain the DOTS Strategy, the countries should implement specific measures targeting these populations.

✤ *Regional-level Activities*

- Advise on the preparation of intervention plans consistent with the six steps listed above to assist the countries in addressing TB in poor populations.
- Encourage the countries and NTPs to commit to adopting and developing policies and strategies aimed at addressing the problem in these population groups.
- Facilitate Regional meetings with country experts in order to share experiences, set criteria for prioritizing populations, and establish lines of intervention, emphasizing prisoners, indigenous populations, and marginal populations in large cities.
- Contribute to the development of materials for training, information, and guidelines.
- Facilitate strategic partnerships for the mobilization of resources and establish coordination with PAHO's Health Services Unit.

7 *The association between poverty and TB is well known and documented. Thus, people living in poverty are included as one of the groups vulnerable to TB. This vulnerability stems from various factors such as limited access to health services, education, knowledge, and employment, as well as ethnicity, gender, geographical location, living conditions, migration, and social exclusion.*

5.3. STRATEGIC LINE 3

Strengthen the health system, emphasizing primary care, comprehensive approach to respiratory diseases (PAL strategy), the laboratory network, and the development of tuberculosis human resource policies, in the countries of the Region.

5.3.1 Strengthen the Laboratory Network and Drug Resistance Surveillance in the Countries of the Region

Development of the network of TB bacteriology laboratories in the countries of the Region should go hand in hand with the development of other components of the DOTS Strategy. Their infrastructure and equipment should be consistent with needs and should be repaired and replaced on the basis of biosafety recommendations and technology needs. Furthermore, the network should strengthen its technical and production capacity to perform culture. It should have sufficient numbers of skilled personnel to permanently guarantee the quality and timeliness of the work.

Five areas of work will be promoted to enable the laboratory network to assist the NTP with a timely, quality response and optimize its work:

1 **Development of the Regional laboratory network** to offer timely, quality advice to the countries, a supranational network will be developed through the SRLs and CCs that provide technical assistance in TB, promoting their inclusion in the NTPs.
2 **Human resource development.** See section 5.3.3 Support for Human Resource Management Policies in Tuberculosis and Knowledge Dissemination.
3 **Strengthening of the technical area** to optimize the coverage and yield of the basic techniques in use, with quality assurance and biosafety, and to adopt new technologies suited to the epidemiological situation and resources of each country.
4 **Monitoring of resistance to TB drugs** to support laboratories in the implementation of strategies and initiatives to quantify resistance to first-line TB drugs, with a view to improving the representativeness, quality, and timeliness of the results. In selected countries, studies will be introduced that evaluate the patterns of resistance to second-line drugs, based on the MDR-TB projects.
5 **Research** to encourage technical and operations research to develop better methods and strategies for the laboratory services in order to improve patient care. Research will be promoted in laboratories that have sufficient technical and operating capacity to engage in these activities without jeopardizing their essential functions.

The following activities linked with the laboratory network should be **supported through** technical assistance from the Regional Program on Tuberculosis and the supranational laboratory network:

✤ *General Activities*

- Coordinate technical cooperation with the SRLs and CCs.
- Guarantee the efficient flow of information between the NTP and the national laboratory network, and between the laboratory network's national reference laboratory and the SRL and CCs.
- Include the people responsible for the TB laboratory network in NTP management teams.
- Conduct annual situational diagnoses, establish medium-term efficiency goals, monitor and evaluate the performance of the TB laboratory network.
- Identify a line in the NTP budget that includes the necessary resources for the operation of the laboratory network and the achievement of program goals.
- Promote the implementation of programs aimed at achieving quality assurance in sputum-smear microscopy, culture, and sensitivity tests of first-line drugs.
- Streamline the procedures (including administrative procedures) that affect the time between requests for sputum-smear microscopy and tests of sensitivity to first-line drugs and the use of the results.
- Promote the establishment of infrastructure, equipment, and laboratory practices that follow international biosafety recommendations.
- Institute a program for the calibration, maintenance, and repair of laboratory equipment.
- Include or update the quality control and biosafety chapters in the NTP's technical standards.
- Design and implement a training program to maintain the technical competencies of the human resources in the TB laboratory network, in coordination with the NTP and based on the results of the situational diagnosis.
- Increase and optimize the use of culture for diagnosis and treatment assessment.
- Involve the TB laboratory network in the operations research planned by the NTP.
- Design, implement, and/or share operations, national, international, and/or multicenter studies to generate evidence that improves the services provided by the laboratory networks.

✤ *Activities, by Scenario*

Scenario 1: Countries with a low incidence of TB (incidence rates below 25 cases per 100,000 population) and 90% of the population covered by DOTS

Scenario 2: Countries with an intermediate incidence of TB (incidence rates between 25 and 50 cases per 100,000 population) and 90% of the population covered by DOTS

- Improve training programs on sputum-smear microscopy to guarantee its quality in scenarios with a very low frequency of positive results.
- Introduce or optimize rapid, validated diagnostic techniques that are highly sensitive, according to the technical expertise, needs, and/or resources of the country.
- Introduce or optimize the use of rapid, and preferably simple, validated techniques to determine the sensitivity and resistance to first-line drugs.
- Develop standards for the interpretation of results when using rapid tests.
- Develop and promote the use of a flow chart for application of the new diagnostic techniques, sensitivity tests, and results.

Scenario 3: Countries with a high incidence (incidence rates above 50 cases per 100,000 population) and 90% of the population covered by DOTS

Scenario 4: Countries with a high incidence (incidence rates above 50 cases per 100,000 population) and less than 75% of the population covered by DOTS

- Implement culture and tests of sensitivity to first-line drugs in Guyana, Haiti, and Suriname.
- Introduce or optimize simple, rapid techniques to determine sensitivity and resistance to first-line drugs in countries with primary MDR-TB above 3%.
- Introduce or optimize simple, rapid techniques to determine sensitivity and resistance to first-line drugs in Brazil.

✤ *Regional and Supranational Laboratory Network Activities*

- Keep the TB laboratory a priority on the work agenda of the Regional Program on Tuberculosis.
- Support reactivation of the Regional Network and the Region's Supranational Laboratory Network.
- Provide assistance in the organization or reorganization of national networks, redefining the roles and functions of the different levels of TB laboratories.
- Support the preparation of basic technical operating and biosafety standards for laboratories with different levels of complexity.
- Draw up standards to maintain the quality and cost-effectiveness of laboratories in countries with low TB prevalence.
- Promote operations research on innovative techniques to improve performance in sputum examinations.
- Reach a consensus on quality control standards for the various bacteriological methods; facilitate and advise on their implementation.
- Introduce the Kudoh method for transporting samples from areas where it is difficult to do cultures.
- Advise on the development of strategies to improve administrative and operations management of the network.

- Work strategically with partners to mobilize resources and/or take advantage of specific experiences that optimize technical assistance.
- Promote and maintain a professional training program for human resources in laboratories and training schools.
- Promote operations research that validates techniques aimed at more effective and timely diagnosis of TB cases.
- Provide technical assistance in conducting periodic MDR-TB surveillance studies and the implementation of permanent monitoring of drug resistance in therapeutic failures of treatment regimens.
- Advise on the transfer of technology from the developed to the developing countries.
- Monitor and evaluate the operations of the Region's laboratory networks.
- Promote the creation of a budget line designed to strengthen the capacity of the laboratory network in cooperation projects.

5.3.2 Practical Approach to Lung Health Strategy

The Practical Approach to Lung Health (PAL) is a strategy that was developed for the syndromic management of patients with respiratory symptoms who present at health services in areas with DOTS coverage. PAL offers standardized interventions to provide an appropriate, cost-effective response in primary health care to the high demand for health services for respiratory symptoms in patients over the age of 5 years. Its purpose is to improve (i) the quality of care for each respiratory patient; and (ii) the efficiency of primary health care services in the treatment of respiratory diseases, targeting TB, acute respiratory infections (pneumonia), and chronic respiratory diseases (asthma, chronic obstructive pulmonary disease). Thus PAL helps to increase TB case detection and improve the quality and timeliness of its diagnosis.

Country-specific Activities

A) Countries That Have Initiated PAL

Periodically monitor and evaluate activities (including contributions of PAL to case-finding) and prepare plans for expansion of the strategy in accordance with local conditions, results in pilot areas, and results of periodic evaluations.

B) Countries That Have Not Yet Initiated PAL

Scenario 1 y 2: Countries with low and medium estimated TB incidence and more than 90% of the population covered by DOTS

- Implement PAL according to established guidelines.

Scenario 3: Countries with high estimated TB incidence and more than 90% of the population covered by DOTS

- Implement PAL after implementing the plan for DOTS quality consolidation.

Scenario 4: Countries with high estimated TB incidence and less than 75% of the population covered by DOTS

- Implement PAL after successfully finalizing quality DOTS expansion and preparing a plan for its support and consolidation.

✤ ***Regional-level Activities***

- Create a Regional working group on PAL and support the creation of national working groups.
- Support the countries at each step required for the implementation of PAL, either at the national level or at pilot sites by:
  - Encouraging the health authorities and NTPs of the countries to commit politically to adopting and implementing the PAL Strategy;
  - Providing guidance for evaluating existing conditions in order to adapt the PAL Strategy;
  - Contributing to the adaptation and development of PAL training guidelines and materials;
  - Supporting the design and implementation of a baseline survey on pre- and post-training management of respiratory pathology at pilot sites (feasibility study);
  - Contributing to staff training on PAL guidelines;
  - Supporting an evaluation of PAL's impact at the pilot sites and the design of the national expansion plan;
  - Assisting the NTPs with resource mobilization and the nationwide expansion of the PAL Strategy.

- Set up coordination with the Regional and Operational Plan for Responding to Pandemic Influenza (i.e., Regional Influenza Plan), with the acute respiratory infections and tuberculosis component of the PAHO/WHO Integrated Management of Childhood Illness (IMCI) Strategy, and with the initiatives launched by international partners.
  - Organize and hold meetings with countries using the PAL Strategy to share experiences, research results, and the preparation of national PAL plans.
  - Contribute to the development of management and epidemiological surveillance guidelines for respiratory diseases in persons over 4 years of age, integrated into the NTP reporting and information system, and complementary to and coordinated with IMCI and the Regional Influenza Plan.
  - Forge strategic partnerships for the mobilization of resources.

5.3.3 Support for Tuberculosis Human Resource Management Policies and Knowledge Dissemination

One of the principal limitations identified for the implementation and expansion of the DOTS Strategy worldwide is the lack of sufficient skilled human resources at the different levels of the NTPs.

Recent analyses in the Region of the Americas of the performance of the Essential Public Health Functions reveal that the development of health human resources is one of the functions most overlooked in the countries of the Region.

HRD strategies should be comprehensive, multidisciplinary, cross-cutting in health systems, and long-term. They should consider aspects not only related to the requirements of health services and systems, but also to the rights of users and workers. This **strategic line** will promote the active participation of all sectors directly related to human resource education, from the policy-making stage through the implementation and evaluation stages.

The education of human resources for TB control will be considered within the health systems' strategic framework, taking into account the opportunities and threats posed by decentralization.

Given all of the above, the HRD strategy for tuberculosis will be regarded as a fundamental element in the achievement of the goals set for control of the disease by the countries and the Region.

Policies for tuberculosis human resource management and development will consider several factors: resource planning, efficient utilization, staff training by levels (specialists, general practitioners and managers, intermediate level of the NTPs, peripheral level, and the community), and type of services.

The importance of other factors, such as adequate distribution of human resources, labor incentives, contractual stability, continuing education, and career development, is also accounted for.

✤ *Country-level Activities*

HRD, when focusing on the country level, should be aimed at guaranteeing the proper application of national standards that support the implementation or expansion of the DOTS Strategy, emphasizing in particular the distribution, availability, composition, and performance of human resources, and should:

- Identify the entities in the country that can support the NTP in human resource management for the program.
- Evaluate the current status of human resources available for DOTS Strategy implementation, taking into account numbers, distribution, capacity, and motivation.
- Increase monitoring, supervision, and evaluation activities of an educational rather than enforcement nature.
- Create, implement, and strengthen methodologies that identify performance deficiencies related to the lack of skills and that make it possible to plan educational actions (formal or on-the-job training).
- Develop or improve training plans to guarantee that new TB control staff members participate in orientation and training programs as soon as they start a new position.
- Implement or improve existing TB control training programs.

- Form partnerships with universities, scientific associations, and other institutions that train health human resources to foster multidisciplinary centers of excellence that provide comprehensive support for TB control policies and activities in the country.
- Analyze and review basic training programs for physicians, nurses, laboratory professionals, and other health professionals who participate in the implementation or expansion of the DOTS Strategy, and promote their professional development.
- Coordinate training activities with other TB-related programs, such as the national HIV/AIDS program.
- Promote having a national-level official who serves as the focal point for the issue of TB human resources.
- Implement a monitoring system for TB human resources that includes the utilization of personnel databases.

✤ ***Regional-level Activities***

- Organize advocacy activities to overcome the crisis in health human resources and to get the crisis recognized as a priority by the ministries of health and put on the agenda of the partners in the Region.
- Promote the development of methodologies in the Region that make it possible for the countries to determine their real human resource needs for TB control, and make it easier to evaluate the needs of the Region and subregions.
- Assist the countries in the preparation of health HRD plans, particularly for TB control, that take into account the long-term process of developing health human resources and consider medium- and long-term interventions.
- Coordinate the participation of the partners working on this topic in the Region, with a view to avoiding duplication of activities and promoting joint efforts to reach common objectives.
- Identify a Regional-level HRD focal point to facilitate coordination with WHO and the countries.
- Translate and disseminate recommendations on the subject of human resources issued by the World Health Assembly, DOTS Expansion Working Group, ad hoc committees on the TB epidemic, and other organizations working on the topic.
- Conduct Regional and subregional training courses on human resource management and development.
- Organize workshops for the countries of the Region for creating local capacity on topics such as HRD, personnel management, motivation, research and continuing education, and to promote dialogue among countries on these topics.
- Promote the participation of universities and other institutions that train health human resources in activities related to TB control, beyond the formal activities of basic training.
- Intensify the technical cooperation provided to the countries for the design and implementation of effective strategies for the development and management of human resources for TB control.

- Support the preparation and adaptation of training materials that contribute to the performance of officials who participate in control of the disease at different levels.

5.4 STRATEGIC LINE 4

Improve the population's access to tuberculosis diagnosis and treatment through the inclusion of all health care providers, both public and private.

In numerous countries of the Region, most of the health system, particularly the private sector, still does not participate in DOTS implementation. Many health care providers do not treat and diagnose TB with evidence-based practices. This can lead to over-diagnosis or under-diagnosis, diagnostic delay or even lack of diagnosis, poor treatment outcomes, increased drug resistance, and greater institutional costs to the patient.

Many patients with symptoms suggestive of TB, including the very poor, seek care for their illness from a wide variety of health care providers who do not always provide adequate TB care. The PPM DOTS initiative is a cohesive, structured framework for involving all relevant health care providers in DOTS, ensuring their adherence to the International Standards for Tuberculosis Care.

All health care providers potentially have some specific function to contribute to TB control, which they will identify and work out with the NTP. In turn, the NTP should strengthen its leadership in the sector, providing regulation, financing, monitoring, evaluation, and research on PPM.

In general, public-private activity has been very limited in the Region, while public-public activity has been undertaken by several countries. In the Region, the intention is to have all relevant public[8] and private[9] health care providers adopt the new International Standards for Tuberculosis Care by joining or extending the PPM initiative.

Country-level Activities

Countries with a successfully implemented DOTS Strategy and with the capacity to support the integration of new actors should address the PPM initiative. However it is not necessary to wait until complete DOTS coverage has been achieved in the country, since PPM can be initiated in areas where DOTS is operating effectively.

The following steps are suggested for the implementation of PPM:

- Conduct situation studies that permit:
  - Identification and preparation of a list of suppliers existing in the country or region where the strategy is being implemented;

8 Belonging to the Ministry of Health, such as government or specialty hospitals and all other facilities; Social Security hospitals and ambulatory services; teaching hospitals; services and hospitals under governmental corporations or ministries; medical services for prisons, armed forces, police, etc.

9 Hospitals and private clinics; corporate medical services; hospitals and clinics of NGOs; private physicians, nurses, midwives; pharmacies and drug dispensaries; traditional physicians and other practitioners; informal health care providers; etc.

- Determination of how many and which of these suppliers have a relationship with the NTP and implement TB control activities;
- Definition of the current or potential contribution of each of them to TB control;
- Identification of those interventions that optimize their contribution.

- Identify and generate national resources. Prepare a plan for the implementation of PPM DOTS in accordance with data contributed by the situation study:
  - Designate a person in charge of PPM in the NTP;
  - Create a PPM DOTS working group (NTP and representatives of different relevant suppliers);
  - Prepare an operations plan for implementation; and
  - Identify economic resources for essential activities (advocacy, training, supervision and monitoring, incentives, etc.).

- Prepare practical operations guidelines or adapt WHO PPM DOTS guidelines. Identify working tools (letters of agreement, contracts, commitments, and instruments for records and information).

✤ ***Regional-level Activities***

- Encourage the countries and NTPs to commit politically to adopting and implementing the PPM initiative in order to integrate the public and private health sector for TB control.
- Disseminate the WHO guidelines for PPM DOTS implementation and promote their use by the countries.
- Advise the countries on conducting situation studies and developing implementation plans and national PPM guidelines.
- Disseminate the International Standards for Tuberculosis Care among the ministries of health, scientific societies, social security systems, NGOs, private medicine, and the public.
- Facilitate experience sharing among the NTPs on PPM research, implementation, and impact.
- Coordinate with PAHO's Technology and Health Services Delivery Area to develop comprehensive implementation strategies.
- Forge strategic partnerships for the mobilization of resources.

5.5 STRATEGIC LINE 5

Empower affected persons and the community, and implement advocacy, communication, and social mobilization strategies (ACSM) in countries of the Region.

Empowering Affected Persons and the Community

Experiences in different health programs show that better results are obtained when affected persons and communities are empowered and actively participate in care and treatment, particularly when social networks (family, neighborhood, community) and local social capital (political, economic, religious, civil, educational, and sports institutions and organizations) have an indispensable role to play.

The empowerment of affected persons and the community is essential for achieving TB control objectives. This is a continuous process for getting people and communities to actively participate in TB control through institutions, coalitions, and in other ways at the local and national levels. Because it is not the exclusive responsibility of a single institution or community group, empowerment corresponds to a variety of organizations interested in promoting and providing opportunities for strengthening local capacity for participation.

TB control programs commit themselves to providing opportunities for affected persons and their communities to identify needs and priorities, and design and implement courses of action to improve early detection and treatment of TB. The objective is to provide and support opportunities for promoting dialogue and consensus on objectives and activities.

Possible empowerment strategies include the following:

- Promoting a sense of responsibility and ownership at the grassroots level.
- Participatory assessments to analyze obstacles to detecting people with TB and suggesting actions to overcome them.
- Supporting social networks that contribute to early detection.
- Identifying social mechanisms and strategies for encouraging patients to complete their treatment.
- Educational activities at the grassroots level (e.g., group talks, experience sharing, and presentations by people who are directly affected) to reduce the stigma of tuberculosis and of affected persons, and to address the lack of information on rights and responsibilities and the low perception of risk.
- Joint efforts with health workers to carry out support activities in DOTS centers (e.g., administration of drugs, monitoring, home visits).
- Identifying grassroots-level institutional resources (e.g., in among civil society and the private sector) to support activities.
- Promoting mechanisms for working with families to understand and mitigate the impact of TB through care and counseling.
- Supporting the activities and sustainability of patients' organizations and their involvement

in educational tasks, participation in sharing local experiences at national and international forums, designing and running activities, and fundraising.

✤ *Fostering the Implementation of ACSM Strategies in Countries of the Region*

ACSM strategies involve an interactive process with the communities that goes beyond information, education, and communication. These strategies are used in planning appropriate interventions to address the challenges facing each NTP in order to promote and maintain positive practices in specific populations (particularly the most vulnerable) using a variety of communications and message channels. ACSM should be based on a meticulous assessment of the obstacles to engaging in desirable behaviors as well as on a strategic analysis of motivating factors that can be used in the interventions.

In the context of TB, ACSM strategies should be an essential part of NTP health promotion activities, in which public and private sector health professionals, family members, community leaders, and the media should participate. Communities will adopt behaviors that facilitate timely diagnosis and treatment of patients when they have basic knowledge of TB, adopt attitudes and practices appropriate for the disease, and have guaranteed access to health services.

As an integral element of TB control activities, ACSM is meant to increase the community's basic knowledge of the disease; promote community discussion around the problems TB causes; change attitudes toward the sick, the most vulnerable, and the possibility of becoming ill oneself; reduce familial, social, and workplace stigma and discrimination; create demand for diagnostic, therapeutic, and rehabilitation services; promote appropriate care for neglected populations and for populations in highly-vulnerable, confined settings. Effective ACSM activities are also useful for achieving the political, social, and economic response necessary for implementing, strengthening, and expanding strategies such as DOTS. From this standpoint, organized groups of patients or former patients should play an important role in advocacy and in working for the respect for patients' rights.

The decision to implement a communication strategy should be take into account the available resources and the severity of the problem of undesirable behavior regarding the disease, at the national, sectional or state, and local levels. Similarly, the current degree of DOTS Strategy implementation in the country should be considered.

✤ *Country-level Activities*

- Identify people and organizations specializing in communications and establish joint coordination, planning, and execution of activities.
- Prepare and implement a tuberculosis communication strategy in accordance with the priorities of each NTP and based on baseline assessment results.
- Involve patients and patient groups in community assessments and educational activities, pre-

sentations with partners and authorities, and in designing and conducting communications campaigns.

- Support the formation of associations of people affected by TB and offer training on different aspects of TB control.
- Hold working meetings with health workers and affected persons to identify ways to collaborate.
- Promote the establishment of national coalitions to discuss and support TB control activities.

The countries should consider the following stages in the design and implementation of communication strategies:

Stage 1. Situation analysis. Understand the nature of the barriers to TB control at the local or national level due to knowledge, attitudes, and undesirable practices and the resistance to change. Assess existing or previous communication policies and strategies, information sources, strengths and weaknesses in communications, and analyze available communication resources. Social research methods will contribute the information needed for conducting a situation analysis.

Stage 2. Analysis of communications needs and available resources. A critical review of previous experiences and of available technical and economic resources will help keep this strategic line from repeating errors, strengthen it based on the success achieved, determine what kind of technical assistance is needed, and permit planning (including budgetary) that is more realistic and relevant for the countries and the Region. An inventory of partners who are experts on the subject and their timely involvement would be of great importance to the success of this strategic line.

Stage 3. Defining desired behavioral changes. Ideally, the changes sought should be specific, verifiable, and attainable within a given time period, and should be clearly defined and prioritized based on the analysis of the problems that hinder early diagnosis and completion of treatment.

Stage 4. Defining audiences. Identify the priority and most vulnerable populations/audiences with regard to desired behavior in order to establish the priority intervention objectives. This strategy will take into account the different strata in the community, health authorities, and health professionals.

Stage 5. Planning and selecting strategies. The aim is to generate a desired behavior in response to the identification of one or more health-related factors. The services provided should meet the expectations created by the messages, they should be high-quality, and ideally they should be easily accessible and permanent in order to maintain the behavior achieved.

Stage 6. Selection of materials and channels. Decide on the channels and messages that will be used for executing the strategy depending on the baseline study data. Effective strategies will use various channels of communication and materials that are appropriate for the populations and needs identified.

Stage 7. Managing and executing the strategy. Identify the institutions or companies that will participate in executing the strategy, and jointly decide on individual responsibilities, mechanisms for integration and coordination, and budget.

Stage 8. Evaluation of the strategy. A rigorous analysis of the process and the effect of the interventions is fundamental for generating knowledge and improving the quality and impact of future interventions and for setting national and Regional guidelines and policies in this regard. The expectation is that the change achieved in behavior will be reflected in the epidemiological indicators for disease detection and monitoring.

Stage 9. Demonstration projects for TB communications. Select successful projects as demonstration sites for the country, where the benefit of communications for TB control has been established.

✤ *Regional-level Activities*

- Support the training and work of a communications consultant group so that it can provide technical assistance for the development and implementation of TB communication strategies in the Region.
- Promote alliances among partners with experience in the communications field and the countries for the development of national and subregional strategies.
- Facilitate project development in order to raise funds for NTP communication strategies.
- Offer technical assistance on communication strategies to the NTPs.
- Develop and promote demonstration projects on TB communication and its contribution to TB control at the Regional level.
- Organize Regional and subregional training workshops for people affected by TB on epidemiological, communications, and organizational topics and for sharing TB control experience.
- Hold meetings to identify ways in which associations of affected persons can participate and to identify strategies for funding activities.

5.6 STRATEGIC LINE 6

Include operations, clinical, and epidemiological research in national TB control program plans in the countries of the Region.

TB control in the countries of the Americas has made great strides in the implementation of DOTS and the inclusion of innovative strategies aimed at the integrated management of MDR-TB, TB/HIV, and the care of neglected populations, principally prisoners and indigenous populations; these actions have strengthened the response capacity of the public sector. In view of the MDGs, NTPs need to analyze their epidemiological and operational data in depth, measure the impact of their activities, and participate in the approval of new tools for TB control. Accordingly, NTPs, depending on the level of development of their capacities, should include research in their action plans.

One of the most advanced branches of research in the countries of the Region is operations research, which attempts to gain a deeper understanding of the daily activities and functions of the NTPs, obtain information needed for improving activities and services and for planning new activities, study practical problem-solving in the program area, and find better management methods. Operations research seeks to respond to practical questions about the execution, efficiency, and effectiveness of the NTPs. In the Region, this type of research is done systematically in several countries thanks to the contribution of partners such as the U.S. Centers for Disease Control and Prevention (CDC), which has contributed to capacity-building for research in the countries.

Epidemiological research on TB is framed around describing the impact of the disease, and/or the impact of activities to control it, and around the detection of populations at high risk of infection, disease, and/or death. Currently, epidemiological research is of particular interest because all the countries of the Region have based their goals for TB control from 2006 to 2015 on the MDG targets, thus committing them to measuring TB incidence, prevalence, and mortality. All the countries systematically measure trends in the reported incidence of TB, but they do not know the real incidence and prevalence of the disease. The countries record TB-specific mortality in the registry of vital statistics; however, some countries lack this registry and in others there is considerable underreporting. In addition, epidemiological surveillance studies of TB drug resistance are conducted as part of the WHO/IUATLD initiative, which has yielded results in many countries. With the aim of measuring impact and conducting surveillance of MDR-TB, the NTPs should include epidemiological research in their research activities.

Clinical research has great importance for clinical practice, identifying risk factors and groups and ways to prevent risk. From a social and a general perspective, the main purpose of clinical research is to obtain the greatest scientific and technical effectiveness for responding to the questions that arise in daily clinical practice. For TB control, clinical research has an especially impor-

10 PAL, PPM, MDR-TB, TB/HIV and initiatives for TB elimination.

tant role in the research of new drugs, vaccines, and diagnostic tests; however, it is not relevant to the daily work of NTPs. Depending on the NTPs' level of development, different countries of the Region have engaged in this type of research in multicenter research studies of new diagnostic tests, rapid tests for susceptibility and resistance to tuberculosis drugs, measurement of the effectiveness of therapeutic guidelines for combination drugs, etc. Currently, at the initiative of several countries, a Latin American clinical research network is being formed for the purpose of creating local clinical research capacity.

✤ *Country-level Activities*

The countries should include research as a component of the NTPs, involving different actors such as physicians, biologists, laboratory staff, nurses, affected persons, etc., carrying out the following actions:

- Identifying operations research topics, in accordance with the analysis of surveillance data and the implementation plans of new initiatives[10], and preparing, implementing, and disseminating research protocols.
- Identifying epidemiological studies that can measure the impact of control measures and measure fulfillment of the MDG targets as well as the impact of major projects (e.g., GFATM).
- Participating in multicenter clinical studies, depending on the NTPs' level of development.
- Conducting social and/or socio-anthropological studies to identify strategies that modify undesirable behavior in the population.
- Establishing connections between the NTP and national organizations that conduct and finance scientific and technological research in order to stimulate activity among the latter on topics of interest in TB control.
- Actively intervening in the mobilization of national or international funds to finance research.
- Disseminating research findings at national and international levels.

✤ *Regional-level Activities*

- Build national research capability in the NTPs.
- Encourage research and disseminate successful studies in the Region.
- Advise countries that are conducting research projects.
- Help establish coordination with distinguished international and national research centers, as well as with national universities and institutions.
- Forge strategic partnerships for the mobilization of resources for the purpose of obtaining financing for priority research projects.

VI. International mobilization in the region. Partners and cooperation agencies

In order to meet the targets established in the Plan for controlling tuberculosis in the Region, the Regional Program on Tuberculosis should have support from partners who enable the acceleration of technical and political actions to make TB control a priority on the countries' health agendas. The contribution of the partners, in conjunction with that of the NTPs, is focused on ensuring that all people have access to timely, quality diagnosis and treatment, and on reducing the social and economic cost of TB to families, communities, and nations. This initiative for joint efforts is in keeping with the Stop TB Partnership, in the framework of WHO's Stop TB Strategy.

With the Amsterdam Declaration to Stop Tuberculosis (2000) and the Washington Commitment to Stop TB (2001), the necessary political will and operational mechanisms for controlling TB have been ensured, enabling the countries to make rapid progress against the disease toward the 2005 goals. This will was ratified in the Region of the Americas in Resolution CD46.R12 of the 46th Directing Council of PAHO in 2005. The support and active participation of the partners are indispensable for guaranteeing the swift attainment of the goals, including the MDGs.

All those organizations with an interest in TB control are invited to participate as partners, including scientific and academic institutions and associations, financial donors, country-level managers and TB professionals, NGOs, the private sector, the military, and civil society. The work is organized and conducted through the formation of theme groups and information sharing and, in the future, through formalization of the Region's Interagency Committee.

The partners and priority countries meet regularly at Interagency Commission to Stop TB meetings, under the coordination of the Regional Program. One of the objectives of these meetings is to consolidate the strategic partnerships in the Region. To date six meetings have been held; the last four were in Bolivia, the Dominican Republic, Honduras, and Ecuador. Working and having a close relationship with the partners has facilitated discussion forums for reaching consensus on a variety of areas related to TB control. Thus, the areas of greatest need are identified along with the sources of support to address them.

In the implementation of the Plan, the partners play an important role in speeding up DOTS expansion as well as in consolidating the achievements already made, in the prevention and treatment of HIV coinfection and MDR-TB, and in investing in new diagnostic tools and methods, drugs, and vaccines against TB.

The Regional Program will encourage continuation of the Interagency Commission to Stop TB meetings, consolidate strategic alliances in the Region, and promote the creation of Stop TB committees in the countries. To date, six national Stop TB committees have been created in the Region of the Americas, namely in Brazil, Canada, Honduras, Mexico, Peru, and the United States.

Furthermore, the Regional Program will seek and encourage the mobilization of financial resources and offer advisory assistance to the countries for the preparation of country-specific or subregional projects, including the TB component for GFATM, with support for their execution, monitoring, and evaluation.

VII. Monitoring and evaluation of the Regional Plan

Responsibility for monitoring and evaluation of the Regional Plan will lie with the Regional Program on Tuberculosis. The results will be communicated to the Technical Advisory Committee of the Region and of the subcommittees of experts on the strategic lines.

Monitoring and evaluation is an essential component of the Regional Plan in order to measure the effectiveness of the interventions. This component will be included from the design and planning stage for the biannual operating plans forward, to ensure appropriate decision-making for achieving the goals as well as the most effective use of available resources.

A qualitative and quantitative approach will be used for the compilation and analysis of information, since this will assist in better understanding the progress of the Regional Plan, ensure the comparison of different data sources, and reduce bias in the information obtained.

METHODOLOGY

Sources of Verification

In general, the following will be used as sources of verification:

- Reports on epidemiological and operational data collection that the countries complete annually for the preparation of WHO's *Global Tuberculosis Control* report.
- Reports on the evaluation visits made by PAHO/WHO and the partner agencies.
- Results of operations and epidemiological research studies (prevalence, annual risk of tuberculosis infection, MDR-TB prevalence, TB/HIV coinfection, etc.).
- Reports from meetings and workshops, specifically those concerning TB control in prisons and indigenous populations, TB/HIV, PAL, PPM, health human resource training institutions, and meetings of the laboratory network.

Timetable

The information necessary for the evaluation will be collected continuously, as the different activities are implemented.

A biannual review and analysis of the Plan will be carried out, containing the information compiled. The results of this review and analysis will be presented during the meetings of the Technical Advisory Group for the purpose of receiving comments and suggestions on it. In 2007, the first measurement of the impact and results indicators established in the Plan will be conducted.

Starting in 2007, with the preparation of the subsequent operations plan, the timetable of monitoring and evaluation activities will be established.

Responsibility for Data Collection, Analysis, and Decision-making

The Regional Program on Tuberculosis will be responsible for data collection (including reports on evaluation visits to the countries and reports from the Regional meeting coordinated by the Regional Program, i.e., meetings of the Interagency Commission to Stop TB, program heads, laboratory network, and other meetings relating to the six strategic lines), processing, and analysis, and will have the authority to insert appropriate changes in the Regional Plan.

Table 5 ◣ **Monitoring and evaluation, Regional Plan for Tuberculosis Control, 2006–2015.**

General Objective: The countries of the Region reduce the incidence, prevalence, and mortality of TB, implementing the Stop TB Strategy.

Impact indicators

	Means of verification	Baseline (year)	2007 target	2010 target	2015 target
Prevalence rate. Estimated number of all active TB cases per 100,000 population at a given time.	Prevalence study results. WHO reports.	100 (1990)	55	52	50
Incidence rate. Number of new TB cases per 100,000 population that occur in a given year.	Annual risk of tuberculosis infection study results. WHO reports.	66 (1990)	40	35	33
TB mortality rate. Number of deaths due to TB per 100,000 population in a given year.	Results of analysis of country death records. WHO reports.	10 (1990)	6	5.5	5

Outcome indicators

Specific Objective 1: Ensure health care services for every TB patient that include quality implementation of the DOTS Strategy.

	Means of verification	Baseline (year)	2007 target	2010 target	2015 target
DOTS coverage. Proportion of the population covered by health services declared DOTS.	Informes anuales de los países sobre situación operacional. Informes de evaluación.	78% (2003)	90%	95%	98%
Detection rate under DOTS. Proportion of SS+ cases reported annually under DOTS, out of total estimated SS+ cases.	Annual operational reports of the countries. Evaluation reports.	50% (2004)	70%	75%	78%

Success rate for new SS+ under DOTS. Proportion of cases successfully treated (cured + completed treatment), out of total reported cases.	Annual operational reports of the countries. Evaluation reports.	81% (cohorte 2002)	85%	86%	87%
Specific Objective 2: Decrease the incidence of TB and HIV in populations affected by both infections.					
TB mortality attributed to HIV/AIDS. Percentage of TB mortality attributable to HIV/AIDS.	Country epidemiological reports. Epidemiological research findings. WHO reports.	7% (2003)	6%	5%	4%
Epidemiological surveillance of TB/HIV coinfection. Countries implementing systematic or periodic surveillance of TB/HIV coinfection.	Country epidemiological reports. Epidemiological research findings. WHO reports.	10% (2004)	30%	60%	100%
Specific Objective 3: Prevent and control MDR-TB within the framework of the DOTS Strategy.					
Proportion of MDR-TB patients treated within the framework of the DOTS Strategy. Proportion of MDR-TB patients treated under DOTS, out of total MDR-TB patients.	Evaluation reports from visits to the countries. Reports submitted to GLC. WHO estimates.	15% (2003)		60%	85%
Specific Objective 4: Guarantee timely, quality diagnosis and bacteriological monitoring through strengthened laboratory networks.					
Established national laboratory networks. Laboratories of the Region meeting standards established by WHO (quality control, supervision, standards, training, etc.).	Network activity reports, country epidemiological reports, publications, reports of meetings of SRL and national laboratory network.	20 (2004)		28	35
National laboratory networks with capacity for culture. Countries that are systematically using culture as case diagnosis and monitoring method.	Network activity reports, country epidemiological reports, publications, reports of meetings of SRL and national laboratory network.	5 (2004)		26	35
MDR-TB surveillance. Countries that perform drug-susceptibility testing for all cases of initial treatment failure and/or periodically in national studies.	Network activity reports, country epidemiological reports, publications, reports of meetings of SRL and national laboratory network.	5 (2004)		26	35
Specific Objective 5: Involve all health care providers (public, nongovernmental, and private) in TB control.					
PPM DOTS Implementation. Number of countries with PPM DOTS implemented and following International Standards of Tuberculosis Care.	Reports on evaluation visits to the countries. Reports on PPM DOTS meetings; publications.	2% (2005)			
Specific Objective 6: Reduce stigma and discrimination toward TB patients and improve their access to DOTS services with support from advocacy, communication, and social mobilization (ACSM) strategies and participation of affected persons.					
ACSM strategies being implemented. Number of countries implementing ACSM strategies and involving the associations of affected persons in control activities.	Reports on evaluation visits to the countries. Reports on mass communication meetings and workshops	3 (2005)		20	38
Specific Objective 7: Strengthen management of NTPs through HRD strategies that form an integral part of the NTP national plans.					
Human resource programs being implemented. Number of countries implementing human resource programs.	Reports on evaluation visits to the countries. Analysis of data collected through specifically designed questionnaire.	1 (2005)		20	38
Specific Objective 8: Develop and/or strengthen the research capacity of NTPs.					
Research as a component of NTP plans. Number of countries that conduct research as part of TB control.	Reports on evaluation visits to the countries. Research publications.	15 (2005)		26	35

VIII. Implementation of the Regional Plan

The Regional Plan will be implemented through biannual plans with intermediate targets, in consensus with the Member Countries.

The methodology for implementing the Plan will conform:

- In the Regional Program: to biannual planning in accordance with PAHO/WHO standards and the objectives of the plan.
- In the countries: to the planning processes in the ministries of health and to each country's needs, which will be incorporated in medium- or long-term strategic plans consonant with the Regional Plan, in accordance with Directing Council Resolution CD46.R12, Washington 2005 (Annex 2).

IX. Economic resources needed

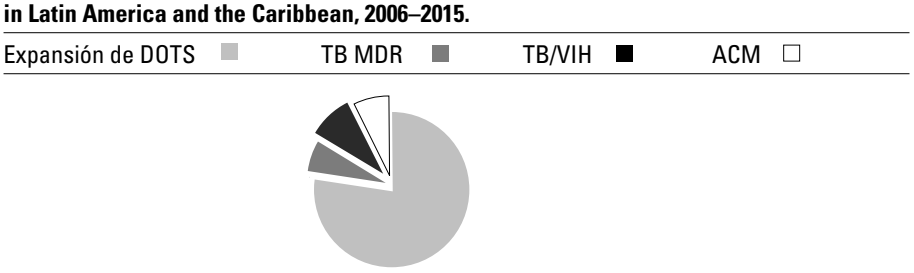
According to *The Global Plan to Stop TB 2006–2015,*[11] in the Region of the Americas (in Latin American and Caribbean countries) a total of US$**1.8 billion** will be required for implementation of the Global Plan in the period 2006–2015.

More than 75% of these resources would be allocated to DOTS expansion and quality improvement and the rest would be distributed in almost equal parts for the control of MDR-TB and TB/HIV, and for ACSM, all in accordance with the components of the Stop TB Strategy. These amounts are shown in Table 6 and Figure 15.

Table 6 ◣ **Estimated resources needed to implement the Global Plan to Stop TB in Latin America and the Caribbean, 2006–2015.**

Regional Plan strategic line	Expected outcome	Resources needed (US$ millions)
1 DOTS expansion 3 Strengthen health systems 4 Involve all health workers	DOTS expansion and quality improvement	1,383 (77%)
2 TB/HIV, MDR–TB, and other challenges	Improved MDR-TB control	121 (7%)
2 TB/HIV, MDR-TB, and other challenges	Implementation of TB/HIV collaborative activities	166 (9%)
5 Social mobilization (ACSM)	Increased access to services, reduced stigma, and improved adherence to treatment	124 (7%)

Figure 15 ◣ **Breakdown of resource needs for implementation of the Global Plan to Stop TB in Latin America and the Caribbean, 2006–2015.**

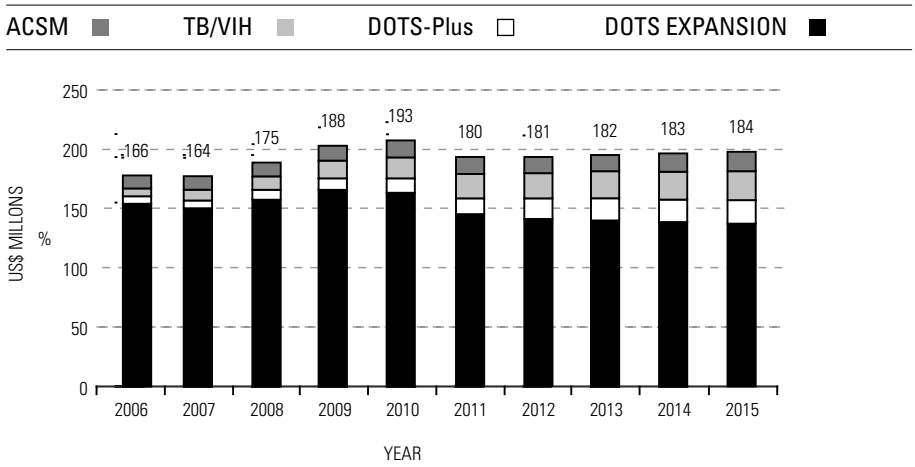


Source: World Health Organization, Stop TB Partnership. *The Global Plan to Stop TB, 2006–2015: Actions for Life. Towards a World Free of Tuberculosis.* Geneva: WHO; 2006.

11 World Health Organization, Stop TB Partnership. *The Global Plan to Stop TB, 2006–2015: Actions for Life. Towards a World Free of Tuberculosis. Geneva: WHO; 2006. Actions for Life. Towards a World Free of Tuberculosis. Geneva: WHO; 2006.*

When looking at the need for resources during the decade 2006–2015, it is expected that the maximum investment will be made in 2010, when US$193 million will be required; from then on, the amount needed will range between US$180 million and US$184 million per year (Figure 16), for maintenance and minimal expansion of activities.

Figure 16 **Projected annual cost over time for the expansion of DOTS, and for MDR, TB/HIV, and ACSM, in Latin America and Caribbean, 2006–2015.**



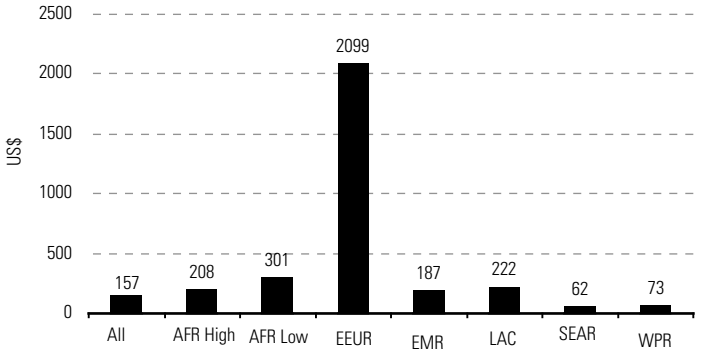
* Source: World Health Organization, Stop TB Partnership. *The Global Plan to Stop TB, 2006–2015: Actions for Life. Towards a World Free of Tuberculosis.* Geneva: WHO; 2006.

If the current sources of financing were maintained, these resources would come for the most part from the national budgets (62%). Thirteen percent would come from donors, including GFATM. Thus, assuming that these commitments will be kept, the gap to ensuring adequate execution of activities is 25%, or US$456 million, for the decade.

If the activities included in the Global Plan and Regional Plan were implemented successfully, case detection would be expected to reach 85% in 2010 and 90% in 2015, while the treatment success rate would reach 85% in 2010 and 87% in 2014, maintaining this level until 2015. The combination of interventions would prevent nearly 406,000 deaths, compared to a situation in which the DOTS Strategy is not implemented.

Considering the projected costs and possible impact, implementation of the Global Plan would imply a cost of US$222 per disability-adjusted life year (DALY) gained. As shown in Figure 17, the cost in the Region of the Americas is moderately higher than the world average (US$157). This gauge of cost-effectiveness can help decision-makers prioritize tuberculosis control interventions.

Gráfico 17 ◣ **Cost per disability-adjusted life year (DALY) gained under the Global Plan to Stop TB, by Region, 2006–2015.**



*The high costs in Eastern Europe are the result of hospitalization during normal TB treatment and the high incidence of MDR-TB, which is much costlier to treat.
Source: World Health Organization, Stop TB Partnership. The Global Plan to Stop TB, 2006–2015: Actions for Life. Towards a World Free of Tuberculosis. Geneva: WHO; 2006.

Another aspect to consider is the financial resources needed to implement the Regional Plan at the Regional level. It is calculated that implementation of the first two years of the operational plan (2006–2007) will require a total of US$4.6 million, of which US$3.3 million is currently available. Therefore, the gap to cover in this period is estimated at US$1.3 million. Table 7 shows the financial needs by strategic line.

Table 7 ◣ **Resources necessary for implementation of the 2006–2007 Operational Plan (in US$) in the Region of the Americas**

Strategic line	Needed	Available	Gap
1. DOTS Strategy expansion	2,563,234	2,103,234	460,000
2. Strengthening TB/HIV, MDR-TB control, and others	655,200	495,200	160,000
3. Strengthening health systems	542,500	372,500	170,000
4. Public-private provider mix	169,000	89,000	80,000
5. ACSM strategy implementation and community empowerment	390,000	74,000	316,000
6. Inclusion of research in NTP plans	341,122	215,122	126,000
Total	**4,661,057**	**3,349,056**	**1,312,000**

The resource gap is greatest for Strategic Line 1, DOTS Strategy expansion, in absolute terms, but it is proportionately greater for Strategic Line 5, ACSM strategy implementation and community empowerment, for which allocated resources are barely available for this biennium.

References

1. World Health Organization. *Global Tuberculosis Control: Surveillance, Planning, Financing. WHO Report 2004.* Geneva: WHO; 2005.
2. World Health Organization. *Public-Private Mix for DOTS. Global progress. Report of the Second Meeting of the PPM Subgroup for DOTS Expansion*. Geneva: WHO; 2004. (WHO/HTM/TB/2004.338).
3. World Health Organization. *Cost and Cost-effectiveness of Public-Private Mix DOTS. Evidence from Two Pilot Projects in India.* Geneva: WHO; 2004. (WHO/HTM/TB/2004.337).
4. World Health Organization. *Practical Approach to Lung Health (PAL). A primary health care strategy for the integrated management of respiratory conditions in people of five years of age and over.* Geneva: WHO; 1995. (WHO/HTM/TB/2005.351).
5. Goodman RA, Foster KL, Trowbridge FL, Figueroa JP, eds. Global disease elimination and eradication as public health strategies. *Bull WHO* 1998;76(Supp 2):1–12.
6. Pan American Health Organization. [Final report of the first subregional Meeting of Low-Tuberculosis-Prevalence Countries.] San José, Costa Rica; December 1999. (PAHO/HCP/HCT/165/00).
7. Pan American Health Organization. [Final report of the third subregional Meeting of Low-Tuberculosis-Prevalence Countries.] Santiago de Chile, Chile; 2003 (PAHO/DCP/CD286/2004).
8. Joint United Nations Programme on HIV/AIDS (UNAIDS). *AIDS Epidemic Update: December 2004.* Geneva: UNAIDS; 2004. (UNAIDS/04.45E).
9. World Health Organization. *Interim policy on collaborative TB/HIV activities.* WHO: Geneva; 2004. (WHO/HTM/TB/2004.330).
10. World Health Organization. *Laboratory Services in Tuberculosis Control.* Geneva: WHO; 1998. (WHO/TB/98.258).
11. World Health Organization. *Guidelines for Surveillance of Drug Resistance in Tuberculosis.* Geneva: WHO; 2003. (WHO/TB/2003.320).

12. World Health Organization. *Anti-tuberculosis Drug Resistance in the World.* Report No. 3. Geneva: WHO; 2005. (WHO/HTM/TB/2004.343.)

13. Uplekar M and Lonnroth K. *Engaging All Health Care Providers in TB Control. Guidance on implementing public-private mix approaches.* Geneva: WHO; 2006. (WHO/HTM/TB2006.360.)

14. World Health Organization. *Public-Private Mix for DOTS: Practical Tools to Help Implementation.* Geneva: WHO; 2003. (WHO/CDS/TB/2003.325.)

Annex I

THE STOP TB STRATEGY

World Health Organization

THE STOP TB STRATEGY

VISION	**A WORLD FREE OF TB**
GOAL	To dramatically reduce the global burden of TB by 2015 in line with the Millennium Development Goals and the Stop TB Partnership targets
OBJECTIVES	• Achieve universal access to high-quality diagnosis and patient-centred treatment • Reduce the human suffering and socioeconomic burden associated with TB • Protect poor and vulnerable populations from TB, TB/HIV and multidrug-resistant TB • Support development of new tools and enable their timely and effective use

TARGETS	• MDG 6, Target 8: Halt and begin to reverse the incidence of TB by 2015
	• Targets linked to the MDGs and endorsed by Stop TB Partnership:
	  ◦ By 2005: detect at least 70% of new sputum smear-positive TB cases and cure at least 85% of these cases
	  ◦ By 2015: reduce prevalence of and deaths due to TB by 50% relative to 1990
	  ◦ By 2050: eliminate TB as a public health problem (<1 case per million population)

COMPONENTS OF THE STOP TB STRATEGY

1 PURSUE HIGH-QUALITY DOTS EXPANSION AND ENHANCEMENT

a. Political commitment with increased and sustained financing
b. Case detection through quality-assured bacteriology
c. Standardized treatment with supervision and patient support
d. An effective drug supply and management system
e. Monitoring and evaluation system, and impact measurement

2 ADDRESS TB/HIV, MDR-TB AND OTHER CHALLENGES

- Implement collaborative TB/HIV activities
- Prevent and control multidrug-resistant TB
- Address prisoners, refugees and other high-risk groups and special situations

3 CONTRIBUTE TO HEALTH SYSTEM STRENGTHENING

- Actively participate in efforts to improve system-wide policy, human resources, financing, management, service delivery, and information systems
- Share innovations that strengthen systems, including the Practical Approach to Lung Health (PAL)
- Adapt innovations from other fields

4 ENGAGE ALL CARE PROVIDERS

- Public-Public, and Public-Private Mix (PPM) approaches
- International Standards for TB Care (ISTC)

5 EMPOWER PEOPLE WITH TB, AND COMMUNITIES

- Advocacy, communication and social mobilization
- Community participation in TB care
- Patients' Charter for Tuberculosis Care

6 ENABLE AND PROMOTE RESEARCH

- Programme-based operational research
- Research to develop new diagnostics, drugs and vaccines

Stop TB Partnership

Annex II

RESOLUTION CD46.R12 OF THE 46th DIRECTING COUNCIL

PAN AMERICAN HEALTH ORGANIZATION
WORLD HEALTH ORGANIZATION

46th DIRECTING COUNCIL
57th SESSION OF THE REGIONAL COMMITTEE

Washington, D.C., USA, 26-30 September 2005

RESOLUTION

CD46.R12

REGIONAL STRATEGY FOR TUBERCULOSIS CONTROL FOR 2005-2015

THE 46th DIRECTING COUNCIL,

Recognizing that, although preventable and curable, tuberculosis remains an important public health problem in the Americas, as each year it is responsible for more than 230,000 cases and 53,000 deaths;

Considering the diverse epidemiological situation of the Member States, as well as the different characteristics of their health systems and the development levels of their national tuberculosis programs;

Mindful that tuberculosis control faces challenges such as TB/HIV coinfection, multidrug-resistant tuberculosis, and health sector reform;

Considering that the internationally recognized strategy for tuberculosis control is "directly observed treatment, short course" (DOTS), which attained coverage of 78% of the population of the Americas in 2003 and is making great strides in the detection and management of tuberculosis cases;

Considering the need to step up efforts to meet the indicators and goals for tuberculosis set by the World Health Organization's Stop TB Initiative, as well as those within the framework of the Development Goals contained in the Millennium Declaration set for the year 2015; and

Recognizing World Health Assembly Resolution WHA58.14 "Sustainable Financing for Tuberculosis Prevention and Control,"

RESOLVES:

1. To urge the Member States to:

(a) confirm tuberculosis control as a priority health program and expand, improve, or maintain implementation of the DOTS strategy;

(b) consider the Regional Plan when formulating national plans, with the objectives of consolidating gains and attaining the goals set for 2015 in the Millennium Declaration;

(c) strengthen health systems to implement and reinforce strategies for the prevention and control of multidrug-resistant tuberculosis, including DOTS-Plus, to improve collaboration between tuberculosis and HIV/AIDS programs;

(d) promote advocacy, communication, and social participation in national tuberculosis plans, fostering collaboration between the public and private sectors, civil society, the people affected, United Nations agencies, and other interested stakeholders, and forming national Stop TB committees in order to maintain and increase support for national tuberculosis programs;

(e) allocate the necessary financial and human resources for tuberculosis control so that tuberculosis patients have access to the universal standard of care based on proper diagnosis, treatment and reporting, consistent with the new DOTS strategy.

2. To request the Director to:

(a) consolidate and strengthen PAHO's commitment to supporting the expansion and sustainability of the new DOTS strategy in the Region;

(b) cooperate technically with the countries to tackle the new challenges posed by tuberculosis;

(c) encourage partnerships with the public and private sectors and technical and financial agencies that work in tuberculosis control to support the Stop-TB Partnership in the Americas;

(d) improve the formulation and implementation of comprehensive public health strategies for tuberculosis control through resource allocation, sharing of experiences, and development of evaluative tools;

(e) periodically evaluate and report to the Directing Council on the progress made toward achieving Goal 6 of the United Nations Millennium Declaration, especially in the area of tuberculosis control.

(Ninth meeting, 30 September 2005)

Annex III

Global Fund to Fight AIDS,
Tuberculosis and Malaria Projects
Tuberculosis component
Americas Region, May 2006.

	Program Start Date	Approved Grant Amount (USD)	Total Lifetime Budget (USD)
Bolivia	Jul 2004	2,381,646	5,688,896
Brazil	Not signed yet	11,602,427	27,240,000
Dominican Republic	Nov 2005	8,901,456	16,353,319
Ecuador	Dec 2003	3,373,959	3,373,959
El Salvador	Jul 2005	701,125	1,326,567
Guyana	Ago 2004	8,131,836	14,665,170
Haiti	May 2003	6,597,014	6,597,014
Honduras	Mar 2004	2,807,564	2,807,564
Nicaragua	Abr 2003	570,000	570,000
Panama	Dec 2004	1,194,902	2,799,545
Paraguay	Nov 2003	27,791,766	27,791,766
Peru	Not signed yet	21,017,537	32,545,545
Peru	Oct 2004	2,636,816	4,611,816