Tuberculosis

In the SAARC Region

an update 2004

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This is the second annual report on TB situation in the SAARC region and it is an update of the previous one. It includes information on population coverage by DOTS, case detection rate and treatment outcome of seven member countries of SAARC. It also covers the challenges and future action needed to overcome those challenges. Though it is the second report of such kind it covers the available information on TB control since the late 1990s to show the progress towards 2005 TB control targets for case detection rate (70%) and treatment success rate (85%).

This report has been prepared on the basis of information collected from member countries during the year 2003 (and early part of the year 2004) and reviewing the WHO report 2004 on Global TB control. Data from other available sources were also used to better characterize the TB situation. In this report, DOTS coverage and case detection rates are on the basis of 2002 data and treatment outcome is for the 2001 cohort. But some latest information available from country reports is also highlighted.

This report suggests that remarkable progress has been made in this region. For example i) Nearly 60% of the Region's people have access to DOTS where free diagnostic and treatment services are available. ii) Over 0.7 million patients are being registered under DOTS in member countries of this region every year. iii) Treatment success rates under DOTS are 85% or more in most countries of the region and over all regional rate is 85%.Major challenges are however there in control of TB, such as Sustainability of quality in diagnosis and case management, Spreading HIV infection, Emergence of MD-R TB, Migration & cross border issue, Expansion of DOTS in hard to reach areas and Improving the quality of implementation and making it more accessible in order to increases case detection

Quality report on TB epidemiology plays an important role in programme planning and advocacy and there by helps in achieving the success in prevention and control of TB.
The present report "Tuberculosis in the SAARC Region, an up date 2004" is such an attempt.

The SAARC Tuberculosis Center (STC) in Kathmandu, Nepal, would like to thank the epidemiologists and experts within WHO and SAARC member countries who have generated and shared the epidemiological data and facts utilized for this report. Special thanks go to Dr. Md. Mojibur Rahman, Epidemiologist STC who gave maximum effort to prepare the report. Valuable inputs were provided by Dr. Rano Mal Piryani, Deputy Director STC and Dr. B. P. Rijal, Microbiologist, STC. Contributions made by all these experts are gratefully appreciated. The centre acknowledges with thanks the assistance provided by the supportive staff at the STC.

STC is very much indebted to H E, SAARC Secretary General Mr. Q A M A Rahim, and Directors of SAARC Secretariat for their guidance and support. STC is also thankful to other staff of SAARC Secretariat for their cooperation.

We look forward to your comments and suggestions, and continued collaboration in our joint efforts to broaden the partnership for control of tuberculosis in the SAARC region.

Dr. K. K. Jha
Director STC

Abbreviations and Acronyms

AIDS	Acquired Immunodeficiency Syndrome
BRAC	Bangladesh Rural Advancement Committee
CDR	Case Detection Rate (Definition is in Annex II)
CDR in DOTS area	Case Detection Rate in DOTS Area (Definition is in Annex III)
CFR	Case Fatality Rate
CIDA	Canadian International Development Agency
DDR	DOTS Detection Rate (Definition is in Annex III)
DFB	Damien Foundation, Belgium
DFID (UK)	Department for International Development (UK)
DOTS	Directly Observed Treatment Short-course,
ESP	Essential Service Package
GDF	Global Drug Facility
GFATM	Global fund for AIDS, Tuberculosis and Malaria
HIV	Human Immunodeficiency Virus
HPSP	Health and Population Sector Project
HRS	Health Sector Reform
MDR-TB	Multi Drug Resistance TB
MOH	Ministry of Health
MOU	Memoranda of understanding
NGO	Non Governmental Organization
NICC	National Interagency Coordination Committee
NTP	National Tuberculosis Control Programme
RNTCP	Revised National Tuberculosis Control Programme (of India)
SAARC	South Asian Association for Regional Cooperation
SAPP	Social Action Programme Project
SEARO	South East Asia Regional Office
SS+	Sputum Smear-positive
STC	SAARC Tuberculosis Centre
TB	Tuberculosis
TB /HIV	TB and HIV co-infection
USAID	United States –Agency for International Development
WHO	World Health Organization

Summary:
The second annual report on "TB situation in the SAARC region" is an update of the previous one. It includes information on population coverage by DOTS, case detection rate and treatment outcome of seven member countries of SAARC. Though it is the second report of such kind it covers the available information on TB control since the late 1990s to show the progress towards 2005 global/regional targets for case detection rate (70%) and treatment success rate (85%).

This report has been prepared on the basis of information collected from member countries during the year 2003 and reviewing the WHO report 2004 on Global TB control. So in this report, DOTS coverage and case detection rates are on the basis of 2002 data and treatment outcome is for the 2001 cohort. But some latest information available from country reports is also highlighted.

Remarkable progress has been made in this region

- Nearly 60% of the Region's people have access to DOTS where free diagnostic and treatment services are available.
- Over 0.7 million patients are being registered under DOTS in member countries of this region every year
- Treatment success rates under DOTS are 85% or more in most countries of the region and overall regional rate is 85%.

But, we still have a long way to go

Unless this benefit reaches all, we cannot make a visible impact on controlling TB. To achieve the targets set for 2005, and the Millennium Development Goals set for 2015, we need to:

- Expand TB control services to the entire population in SAARC region
- Register more cases under DOTS
- Ensure that we maintain the quality of DOTS services
- Allocate adequate funds to sustain national TB control programmes and
- Increase community awareness about TB and inform and "attract" TB patients to DOTS centres where quality diagnosis and effective treatment of TB are being provided **free of charge**.

Introduction:

SAARC TB Centre is one of the regional centres of SAARC. The main objective of the centre is to work for prevention and control of TB (and HIV/AIDS, as mandated later on) in the region by coordinating the efforts of member countries in this regard. To achieve this objective one of the important functions of this centre is to collect, collate, analyze and disseminate latest relevant information in the field of TB control in the region and elsewhere. In this regard SAARC TB Centre has started to prepare and publish annual SAARC regional epidemiological reports on TB (& HIV/AIDS) since 2003.

This particular report is on TB situation and is an update of the previous (2003) one. The aim of these reports is to chart the progress in regional TB control, and in particular, progress in implementing the DOTS strategy, recommended by WHO as a cost effective approach to TB control. The WHO recommended targets for TB control are (1) to treat successfully 85% of detected smear-positive TB cases and (2) to detect 70% of all smear-positive cases. Since these targets were not reached by the end of year 2000 as originally planned the target year has been reset to 2005. This report present information on case notification s for 2002 and treatment outcomes for patients registered in 2001. Though it is the second report of such kind it covers the available information on TB control since the late 1990s to show the progress towards 2005 global/regional targets for case detection and treatment success, which will help consider the prospects for reaching these targets by 2005.

The Burden of Tuberculosis: Global aspect

Nearly one-third of the global population (2 billion persons) is infected with *Mycobacterium tuberculosis bacillus* and is at risk of developing active clinical TB disease[1]. World wide more than 16 million people are suffering from active TB disease[1]. There were 8.8 million estimated new cases of TB (all types) in 2002, of which 3.9 million were smear-positive (infectious type) [2]. TB is the biggest curable infectious killer of young people and adults in the world today[3]. Every day more than 5000 people are dying from the disease (approximately 2 million per year) [1, 3].

The fact is that deaths from TB are avoidable and the number of annual deaths would be higher if increasing deaths among HIV infected persons are included. TB is the leading infectious killer among people living with HIV/AIDS. In the developing world, 26% of avoidable adult deaths are due to TB. Globally, TB is still the leading infectious disease cause of death among women of child-bearing age and killing more women than all combined causes of maternal mortality. Each year approximately 2.5 million women get ill from TB and one million die[3]. Moreover, worldwide, more than 100,000 children die needlessly from TB every year[4]. By the end of 2002 sixty nine percent of the world's population were covered by Directly Observed Treatment Short-course (DOTS). DOTS programmes notified 3 million new TB cases in 2002. Among these 3 million new cases 1.4 million were smear-positive and represented 37% of the estimated incidence. A total of 13.3 million TB patients, and 6.8 million smear-positive patients were treated in DOTS

programmes between 1995 and 2002[2]. There were 4 million (4038956) cases of TB (all forms) notified in 2002, representing 46% of the estimated 8.78 million new cases[2].

- **Tuberculosis Burden within SAARC Countries**

Tuberculosis is one of the major public health problems in the SAARC region with immense socio-economic impacts. Almost 50% the adult population of this region have already been infected with *Mycobacterium tuberculosis* and are at risk of developing tuberculosis disease. In the year 2002 an estimated 2.4 million people newly developed TB disease of which about 1.1 million were smear positive and capable to spread the disease to others[2]. According to this estimate SAARC region was bearing 27.4% of the total global new TB cases (with 22% of population share). India, Bangladesh, and Pakistan are occupying the 1st, 5th and 6th position in the list of 22 high burden nations (*according to estimated incidence of TB: high burden countries.2002)* with India revealing the highest (20%) global absolute burden of TB. These 3 SAARC nations account for 26.7% of the total global new TB cases. Every year about 0.6 million people are dying due to this disease[2]. More than 75% of these cases and deaths occur among 15-54 years age group, economically the most productive age group. As a result the social and economic loses due to TB are huge [5, 6].

By adopting DOTS strategy this region has been started to show success in TB control. By the year 2002 this region has covered 57% of its population with DOTS and detected 44% of the total estimated new smear positive cases. This region has already achieved the target of 85% treatment success rate of detected new smear positive cases[2]. Major challenges are however there in control of TB, such as

- Sustainability of quality in diagnosis and case management
- Spreading HIV infection
- Emergence of MD-R TB
- Migration & cross border issue
- Expansion of DOTS in hard to reach areas
- Improving the quality of implementation and making it more accessible in order to increases case detection
- Private sector

In this region, 1235457 cases of TB (all forms) notified in 2002 represent 51% of the estimated 2410639 new cases (Annex I). In the year 2002, 30.59% of global notified cases were from SAARC member countries[2]. (Global: DOTS= 3042670, Non DOTS= 996286, Total =4038956, SAARC Region= 1235457)

- **Economic and Social Costs associated with TB**

TB is a major barrier to social and economic development. More than 90% of global TB cases and deaths occur in the developing world, where 75% of cases are within the economically most productive age-group (15-54 years). An adult with TB (in the developing world) loses on average 3-4 months of work time and the economic losses to the family and community are staggering. The estimates suggest a loss of 20-30% of annual household income and, if the person dies of the disease, an average of 15 years of lost income[5]. Within India, every year, more than 300,000 children are forced to leave school because of their parents' illness due to TB, and approximately 100,000 women lose their status as mothers and wives i.e., abandoned by their families because of TB illness[7].

Goal, Objectives and Strategies for TB control in the SAARC Region [8, 9]

Goal

To reduce morbidity, mortality and transmission of TB till it is no longer a public health problem in the region.

Objectives

- To achieve region-wide coverage with DOTS by 2005
- To cure at least 85% of new sputum smear positive TB cases detected and to detect at least 70% of the estimated new smear positive TB cases in the region by 2005
- To reduce TB prevalence (sickness due to TB) and deaths by at least 50% by 2010
- By 2015: (the Millennium Development Goal): to halt and reverse the incidence of TB
- To eliminate TB as a public health problem by 2050

These Objectives Require that Several Issues be simultaneously Addressed:

1. Building health sector capacities
   a. Securing commitment for resources, both human and financial
   b. Ensuring adequate infrastructure and technical capacity for management, implementation, supervision, monitoring and evaluation and operational research
   c. Developing mechanisms for cost-effectively integrating DOTS into health care delivery systems in the context of health sector reforms.

2. Ensuring quality microscopy and treatment services within the public health system
   a. Capacity building of laboratories, including ensuring technical capacity through training and infrastructure development
   b. Ensuring uninterrupted supplies of quality laboratory consumables and drugs
   c. Facilitating collaboration with GDF, when and where necessary
   d. Strengthening supervision; quarterly reporting and feedback

e. Monitoring missions and programme reviews

3. Enhancing case detection and ensuring standardized case management to all patients through partnerships
   a. Expanding partnerships with private sector, medical colleges, NGOs and large employers in business and industry to promote widespread application and utilization of DOTS in these sectors
   b. Developing communication strategies for increased community participation and ownership of DOTS for TB control
4. Addressing emerging issues such as TB/HIV co-infection/HIV related TB, multi-drug resistant TB, disease control in border areas and health sector reform
   a. Establishing a drug resistance surveillance network and initiating DOTS-plus pilot projects in selected areas
   b. Strengthening collaboration between TB and HIV control programmes and promoting operational research to develop effective responses to TB/HIV co-infection
   c. Establishing joint bilateral or regional initiatives for TB control through DOTS in border areas including bilateral exchange of information, referral of patients, establishing DOTS facilities at borders etc.

There is obviously commitment within this region for achieving those targets and nationwide DOTS coverage in each country by 2005. By end of 2002 approximately 57% (78.8 million) of the region's population have access to DOTS services compared with only 11% in 1997. In the year 2002 case detection rate was 44%; it needs to be enhanced. The quality of DOTS implementation in this region has been good; however, it is necessary to intensify and continue to expand DOTS to increase the numbers of those successfully treated and cured. The required key interventions have been identified and built into the 5-year plans for member states in the region as a whole. The resources required have similarly been identified and some commitments have already been met by donors/partners in member states in the region. Resource gaps, however, remain and must be urgently met. Given the current impetus and the additional resources required, the SAARC region will reach global targets between 2005 and 2006.

Progress Made in the SAARC Region

Remarkable progress has been made with Directly Observed Treatment Short-course (DOTS) since it's inception in 1993 by the region. By 1996 all member countries started DOTS strategy for TB control (Table 1). Of the 3 high burden countries Bangladesh has covered virtually the entire country with DOTS; case detection is being intensified, and 33% of all estimated cases were detected in 2002. India has expanded rapidly to cover almost 546 million people (52%) by end of 2002 (Annex I) and currently has the second-largest DOTS programme in the world. India plans to cover 80% of the population by 2004. Pakistan adopted DOTS strategy in 1995 and started DOTS demonstration activities in some areas; DOTS expansion began in earnest after 2000 and (DOTS) coverage was 45 % in 2002, substantially greater than 24% in 2001 and 9% in 2000.The NTP of Pakistan developed a strategic plan for DOTS expansion for 2001-2005.[2]

Table 1. Years of DOTS adoption by SAARC Member Countries

Country	Year of adopting DOTS strategy
Bangladesh	1993
India	1993
Sri Lanka	1994
Pakistan	1995
Bhutan	1996
Maldives	1996
Nepal	1996

Among the low burden countries, Bhutan has achieved complete population coverage; improving the delivery of ambulatory DOTS in the difficult terrain is underway. Maldives achieved and has maintained global targets since 1995.[2] Nepal has implemented DOTS successfully and achieved these targets in mid 2002[10]. According to Country report Sri Lanka achieved more than 74% of coverage with Directly Observed Treatment Short-course (DOTS) by end of 2002 and by 2003 it covered over 80% of it population under DOTS [11].

DOTS services are now accessible to over 57% (Table 2 & Figure1)) of the regional population [2]. Under the DOTS strategy a total of 707126 TB cases (all types) including 323541 (app. 46%) new smear positive cases were notified by this region in 2002 (Annex I). Overall regional treatment success rate of 246078 registered new smear positive TB patients in 2001 was 85% (Table 3 & 4) under programmatic conditions in areas where the strategy has been applied. The quality of diagnosis has been good; however the number of cases detected is still low with only 44 % of the estimated new smear positive cases having been detected in 2002 (Table 5 & 6) [2].

Over all progress in TB control in the SAARC region is shown in Figure 2.

Table 2. DOTS Population Coverage (%); SAARC Countries, 1997-2002

Countries	1997	1998	1999	2000	2001	2002
Bangladesh	80	90	90	92	95	95
Bhutan	0	100	100	100	100	100
India	2.3	9	14	30	45	52
Maldives	100	100	100	100	100	100
Nepal	17	17	75	84	84	89
Pakistan	0	8	8	9	24	45
Sri- Lanka*	94	95	95	64	64	73
Regional	**11**	**18**	**23**	**36**	**49**	**57**

Source WHO Global TB reports: 1999-2004

*DOTS coverage (%) trend of Sri Lanka according to information collected from NTP during country visit for observation of TB and HIV/AIDS activities; date 11-13 August 2004 (also mentioned in Table 13)

year	1997	1998	1999	2000	2001	2002	2003
DOTS coverage (%)	5.2	11.97	25.39	54.3	74.23	74.23	80.26

Figure 1. DOTS Implementation in SAARC Region, (1997-2002)

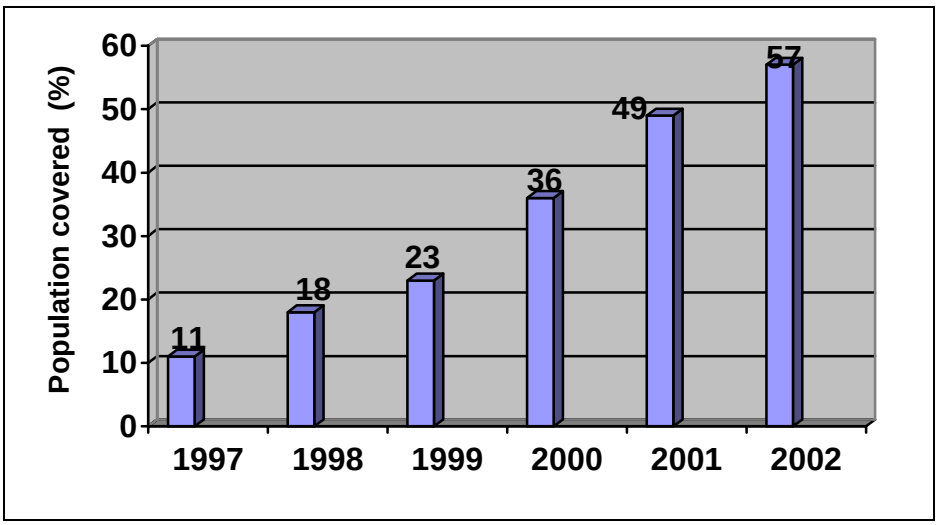


Table 3. TB Treatment Success Rate for New SS+ cases Registered in 2001 under DOTS, SAARC Region

Countries	Registered	Cure Rate	Treatment Success	
			Rate (%)	#*
Bangladesh	38722	81	84	32526
Bhutan	359	78	93	334
India	184523	84	85	156845
Maldives	59	97	97	57
Nepal	12456	83	88	10961
Pakistan	6251	65	77	4813
Sri- Lanka	3708	78	80	2966
Regional Total	246078	83	85	**208503**

*** # calculated on the basis of the given rate (which has been rounded) and registered cases**

Table 4. Treatment Success Rates, DOTS Area, SAARC Region, 1996-2001

Countries	1996	1997	1998	1999	2000	2001
Bangladesh	72	78	80	81	83	84
Bhutan	--	85	90	85	90	93
India	79	82	84	82	84	85
Maldives	93	95	94	94	95	97
Nepal	85	87	89	87	86	88
Pakistan	--	67	66	70	74	77
Sri- Lanka	80	77	76	84	77	80
Regional	**75**	**79**	**81**	**82**	**83**	**85**

"--" data not available

Table 5 Case Detection Rates of TB Patients for the Year 2002, SAARC Region

Countries	Population	Notified TB		Estimated TB		Case detection rate (%)	
		all cases	New SS+	all cases	New SS+	all cases	New SS+
Bangladesh	143809000	81822	46771	317839	143004	26	33
Bhutan	2190000	1089	364	2577	1159	42	31
India	1049549000	1060951	395833	1761339	787162	60	50
Maldives	309000	125	60	145	65	86	92
Nepal	24609000	30359	13714	46714	20931	65	66
Pakistan	149911000	52172	16265	271745	122174	19	13
Sri- Lanka	18910000	8939	4297	10280	4623	87	93
Total	**1389287000**	**1235457**	477304	**2410639**	1079118	51	44

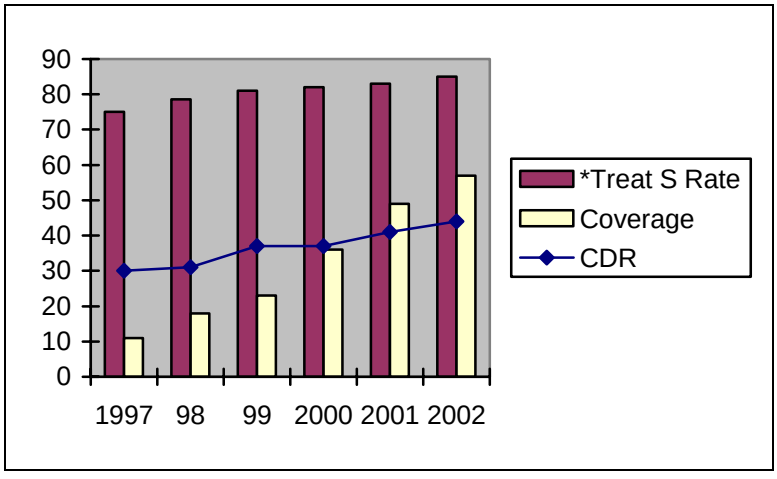
Source: Global TB control, WHO report 2004

Table 6. Case Detection Rate of New SS+ Cases, SAARC Region, 1997-2002

Country	1997	1998	1999	2000	2001	2002
Bangladesh	25	27	27	26	28	33
Bhutan	23	21	24	27	26	31
India	34	34	42	42	47	50
Maldives	91	82	106	86	88	92
Nepal	53	52	61	64	64	66
Pakistan	0	12	5	3	10	13
Sri- Lanka	71	75	79	87	86	93
Regional	30	31	37	37	41	44

Source: *Global report 2003 & 2004*

Figure 2 Progress in TB control, SAARC Region



- Previous- year cohort

The ray of hope is brighter now

From tables 7 and 8, it is evident that during the period 1997 to 2002, globally, there was an increase in the estimated incidence of new smear positive pulmonary TB cases on average by 1.00% per year. However, during the same period SAARC region shows a decrease in the incidence of new smear positive pulmonary TB cases on average by 1.65% per year. This incidence rate, during the one year period from 2001 to 2002 was increased by 3.28% globally and decreased by 3.70 % in the SAARC region. This suggests that progress in control of tuberculosis through DOTS strategy is showing a brighter ray of hope for the service providers, as well as for the suffers. For the success to continue and become greater success stories, TB must be tackled on several fronts. The reason is that the good news may change because of unfolding HIV/AIDS epidemics regionally, HIV having the potential of increasing clinical TB burden regionally as well as driving emergence of MDR-TB. Moreover, to achieve the Targets of TB control SAARC region must overcome the present challenges such as expansion of DOTS to hard to reach areas and sustainability of quality in diagnosis and treatment.

Table 7. Estimated incidence rate of TB cases per 100,000 populations, Global and SAARC region, 1997-2002

Year	Global		SAARC Region	
	All cases	New SS+	All cases	New SS+
1997	136	60	-	85
1998	137	60.6	-	85
1999	141	62	-	84
2000	144	63	187	84
2001	138	61	181	81
2002	141	63	174	78

Table 8. Average Percentage change per year in the estimated incidence of TB cases, Global and SAARC region during 1997 to 2002

Average percentage change per year				
Period	Global		SAARC	
	All cases	New SS+	All cases	New SS+
1997-2002	0.735	1.0		-1.647
2001-2002	2.174	3.279	-3. 867	-3.704

.

COUNTRY PROFILES

BANGLADESH:

Indicators & Country Information, 2002[2]:

Population: 143809000 (2002 estimate, WHO GTB Report, 2004)
Estimated new cases of TB: 317839, equivalent to 221 per 100, 000 population
Estimated new cases of smear positive TB: 143004 equivalent to 99 per 100 000
Percent estimated new cases of TB co-infected with HIV: 0.1%
Prevalence of MDR -TB in cases not previously treated -primary: 1.4%
DOTS population coverage= 95%
Case detection rate (CDR) = 33%
DOTS detection rate (DDR)= 32%
Smear positive cases treated successfully under DOTS (2001 cohort): 32526, equivalent to 84% (32526/38722) treatment success rate (Registered cases in 2001= 38722).

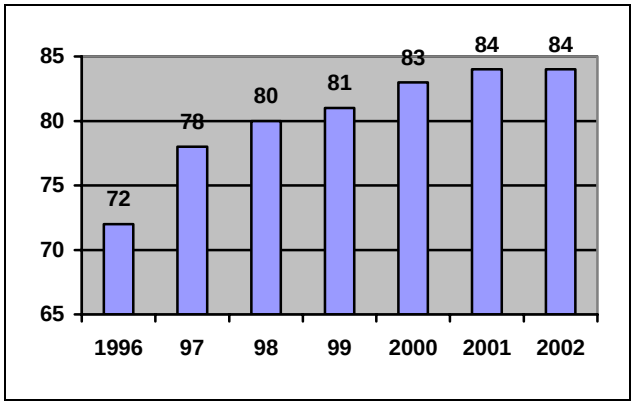
Case detection rate:

$$\frac{\text{annual new SS+ notifications (country)}}{\text{estimated annual new SS+ incidence (country)}}$$

DOTS detection rate:

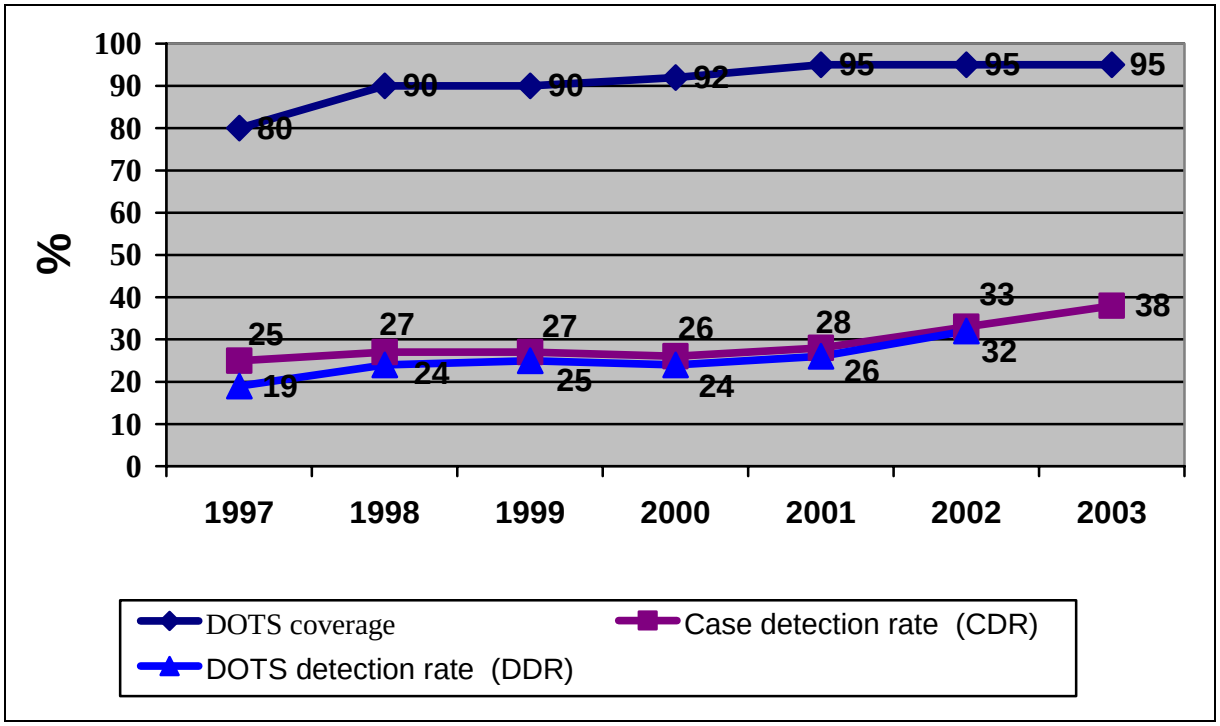
$$\frac{\text{annual new SS+ notifications (under DOTS)}}{\text{estimated annual new SS+ incidence (country)}}$$

Figure 3 Treatment success rate (%) of cohort 1996-20002, Bangladesh



NB.2002 figure from Country Report

Figure 4. DOTS Coverage and Case Detection Rates, Bangladesh, 1997-2003



NB. 2003 figures from country report

Table 9. Estimates-2002 at a glance, Bangladesh[2]:

Population	143 808 546
Global rank (by est. No. of cases)	5
Incidence (all cases/ 100 000 pop)	221
Incidence (new ss+/100 000 pop)	99
Prevalence (SS+/ 100 000 pop)	188
TB mortality per 10 000 population	52
% of adult (15- 49y) TB cases HIV+	0.1
% of new cases multi-drug resistant	1.4

Current Status of Tuberculosis Control:

A major sector–wide approach to health reform- the 1998-2003 Health and Population Sector Programme (HPSP) – integrated the national TB Programme as part of the Essential Services Package (ESP). The aim was to improve equity and access to all essential public health interventions, including TB care. The DOTS strategy was introduced in 1993 and by end 2001 DOTS covered 95% of the country's population. Key components of the strategy have been integrated within the ESP. Mechanism will be developed to ensure that appropriate support services are available, and that the unified training, data management, drug procurement and supply systems are consistent with DOTS[2, 12].

The long term sustainability of TB has been ensured through direct community participation and through collaboration with national NGOs like Bangladesh Rural Advancement Committee (BRAC) and the Damien Foundation, Belgium (DFB). Prisons and medical college hospitals have introduced DOTS. NGOs are the major contributors to the TB control efforts provide DOTS services to 55% of the population in the country under MoUs (Memoranda of Understanding) with the government of Bangladesh [2] .

Treatment success rates under DOTS have been consistently high (84% in DOTS areas in 2001 & 2002 cohorts) but failed to achieve the target level of 85% mainly due to 7% patients defaulted. Case detection rate was 33% in 2002 and 38 % in 2003 suggesting that it is increasing more rapidly. However, it (CDR) needs to be increased more. Under the Health Sector Reform (HSR) plans have been made to forge partnership with health providers in other sectors such as the private sector and medical teaching institutions both to improve access and to ensure that standardized diagnosis and treatment under DOTS are followed throughout the country. Involving the private health sector in the implementation of DOTS is considered vital, as it is a significant provider of services to those seeking care for TB. The Government has continued to accord TB control services a very high priority and the national TB Programme (NTP) has continued to make good progress in several areas[2, 12].

Major actions taken to expand/sustain DOTS during the past two years: [2]

- Capacity for implementation enhanced through improved technical capacity and infrastructure development, especially of the laboratory network
- Urban DOTS projects initiated. These are being implemented through the city health services n Dhaka and Chittagong cities
- Private practitioners oriented to the DOTS strategy and pilot projects begun
- 5- year plan for TB Control developed and finalized
- Behavior change strategy developed
- GDF support for supply of anti-TB drugs secured
- 4-drug FDC has been introduced
- Manual for National TB control has been reviewed and a section for child-hood TB has been incorporated.

Future actions needed to expand/sustain DOTS are to: [6]

- Advocate for strengthening the TB Control component within the health sector reform process; ensure that unified training, procurement, supplies and data management under the ESP are consistent with DOTS
- Secure additional resources through donors/partners and through sources such as the GFATM
- Build capacity of the NTP for DOTS implementation, particularly for supervision and monitoring.
- Strengthen the laboratory network, quality assurance mechanisms and establish drug resistance surveillance
- Strengthen partnership with other sectors such as the private sector and teaching institutes, expansion within the four major urban areas to improve access to and utilization of DOTS as the standard for care for all TB patients.
- Improve drug procurement and logistics to ensure uninterrupted supplies of quality anti-TB drugs and proper buffer stocks at every level.
- Strengthen community education and social mobilization campaigns to increase community participation and allow better access to care for women, children and marginalized groups.
- Establish DOTS services in cross-border areas as envisaged in joint plans developed in collaboration with neighboring states for disease control in border areas.
- Coordinate with HIV/AIDS programme.

Financing:

Following Approval of the GFATM application, the budget is fully funded, not just for 2003, but also for the 5 year period 2003-2007, total budget over the 5 years being US$ 85.9 million. I n 2003 US$ 8.8 million was supposed to provide by the GFATM; and the remaining by the government (US$ 6.2 million) and donors other than GFATM (US$ 1.9 million)[2].

NB. There is a discrepancy between the population estimates used by the government (129 247 233) and that ued by the UN (140 000546). Country used additional indicator "geographic access to DOTS services" which it estimates to be about 50% (versus 95% DOTS coverage. (global Report 2004)

BHUTAN

Indicators & Country Information, 2002:

Population: 2190000 *

Estimated new cases of TB: 2577 equivalent to 118 per 100, 000 population*

Estimated new cases of smear positive TB: 1159 equivalent to 53 per 100 000*

Estimated new cases of TB attributable to HIV: (no data available)**

Prevalence of MDR -TB in cases not previously treated: (no data available)**

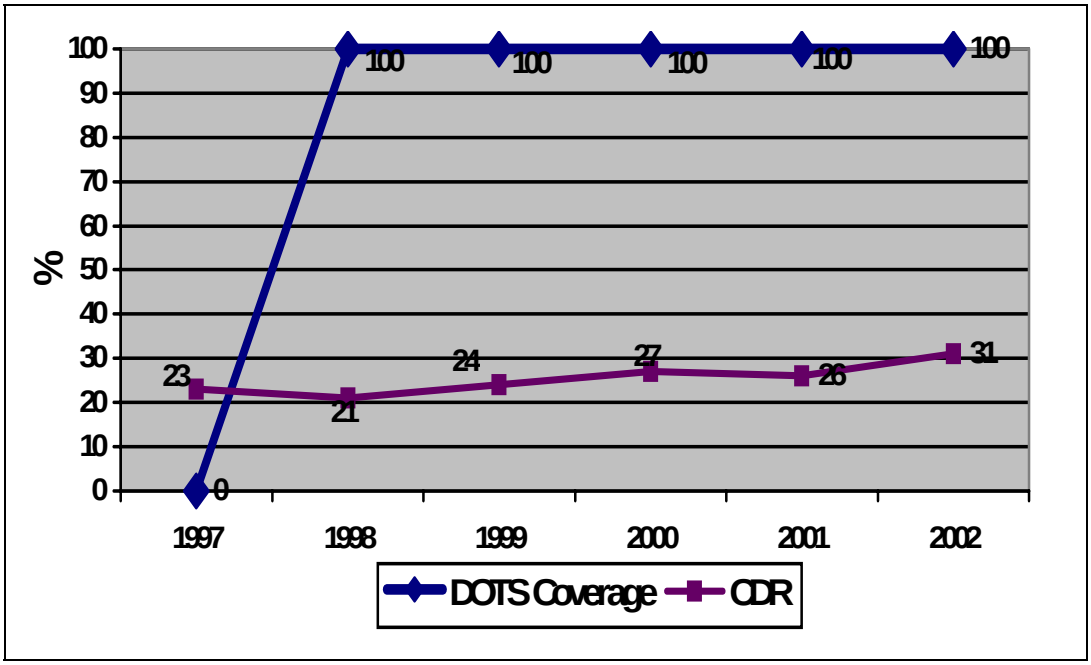
DOTS population coverage: 100% *

Case detection rate (CDR) =31 %

Smear positive cases treated successfully under Directly Observed Treatment Short-course (DOTS) (2001 cohort): 334, equivalent to 93% (334/359) treatment success rate*

*Ref No 2, ** Ref No 12

Figure 5. DOTS Coverage and Case Detection Rates, Bhutan, 1997-2001



(When population coverage is 100% CDR and DDR are equal)

Figure 6. Treatment success rate (%) of cohort 1997-2001, Bhutan

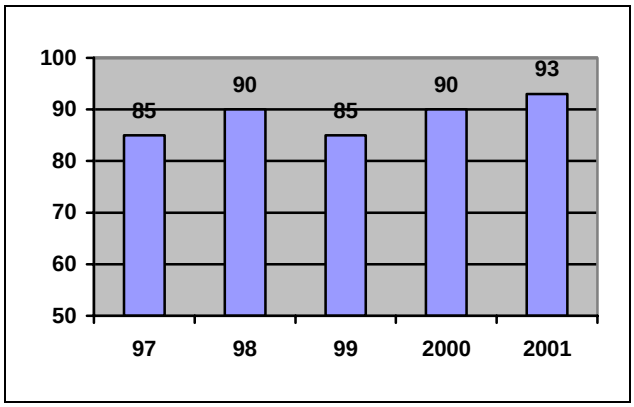


Table 10. TB Status in Bhutan 2001 -2002[13]

Year	Pulmonary		Extrapulmonary	Total cases	Death (CFR)
	SS positive	SS negative			
2001	387	482	344	1213	51 (4.2%)
2002	388	370	293	1051	41 (3.9%)

CFR= case fatality rate
Source: Country report, Bhutan, presented in trainers training on TB control Programme management, 10-19 May 2004, Dhaka

Current Status of Tuberculosis Control:

Countrywide coverage by DOTS was achieved by 1997. Because of its hilly terrain, Bhutan has utilized a strategy of hospitalization during the intensive phase of treatment throughout the country. Most smear positive patients are admitted in the district hospitals for the initial two months; anti TB drugs are provided at the basic Health Units in the respective district during the continuation phase. Diagnostic facilities, excepting culture, have been established at all district hospitals. There is a relatively high proportion of smear negative and extra pulmonary cases. In recent years, an increasing proportion of smear positive cases has been diagnosed, and cure rates have been improving consistently with a success rate of 93% (2001 cohort). However, detection rate of sputum smear-positive cases is low at 31%. [2, 13]

While treatment success rates have been consistently high, cure rates have been relatively low (78% in 2001 cohort: Table 3)) primarily because follow up smear examinations were not uniformly undertaken and reporting from the districts has been incomplete. The challenges posed by the terrain are reflected in the difficulties to coordinate efforts at the district level. Due to the growing economy, Bhutan attracts many workers from neighboring countries; management of cross-border migrants may become crucial to the success of the DOTS programmed in the country. [2, 12]

Future actions needed to expand/sustain DOTS are to: [12]

- Establish regular recording and reporting from the district to the central level
- Provide in-service training of larger numbers of health personnel for DOTS implementation
- Develop strategies for better health seeking behavior and improved utilization of services
- Follow through bilateral and multilateral agreements to address the issue of cross-border migration
- Optimize DOTS delivery in remote areas
- Intensify case detection activities
- Strengthen the laboratory network and establish quality control mechanisms for microscopy services throughout the country
- Enhance management and supervisory capacity of the NTP.
- More coordination is required with HIV/AIDS Programme.

Financing:

The estimated budget for each year of implementation of TB control as envisaged in the 5-year plan averages US$ 1.0 million/ year. Most of this is met from the government budget for health [12].

INDIA:

Indicators & Country Information, 2002:

Population: 104 954 9000 *

Estimated new cases of TB: 1 761339 equivalent to 168 per 100, 000 population*

Estimated new cases of smear positive TB: 787162 equivalent to 75 per 100 000 population*

Estimated new cases of TB attributable to HIV: 4%*

Prevalence of MDR -TB in cases not previously treated: 3.4% (Tamil Nadu State) * &**

DOTS population coverage: 52% *

Case detection rate CDR: 50%*

DOTS detection rate (DDR): 31% *

Smear positive cases treated successfully under DOTS (2001 cohort): 156845 equivalent to 85% (156845/184523) treatment success rate *

* Ref No 2, ** Ref No 12

NB: According to the third (2004) report of WHO/IUATLD Global Project on Anti-tuberculosis Drug Resistance Surveillance, MDR in cases not previously treated are
Wardha District, Maharastra State (2000-2001) = 0.5% (1/197),
Raichur District, Karnataka State (1999) = 2.5% (7/278) and
North Arcort District, Tamil Nadu State = 2.8% (8/282) [14]

Figure 7. DOTS Coverage and Case Detection Rates, India, 1997-2002

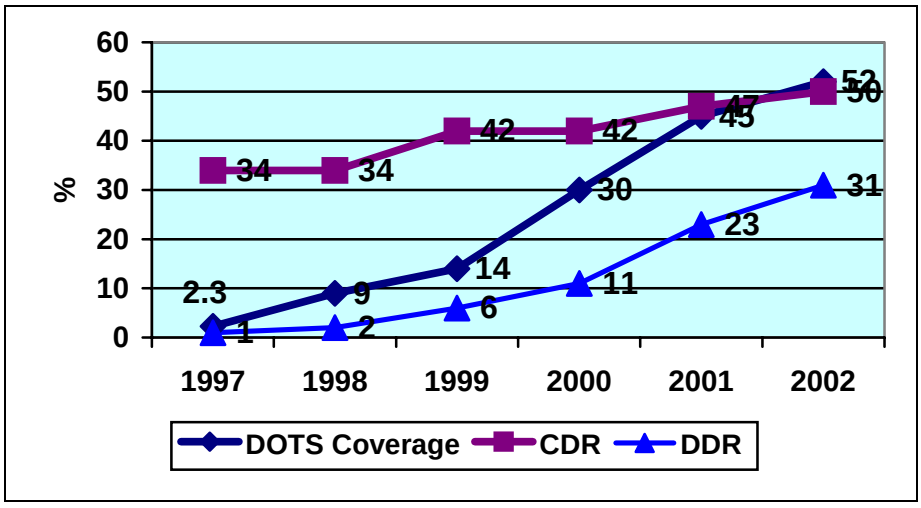


Figure 8. Treatment success rate (%) of cohort 1996-2001, India

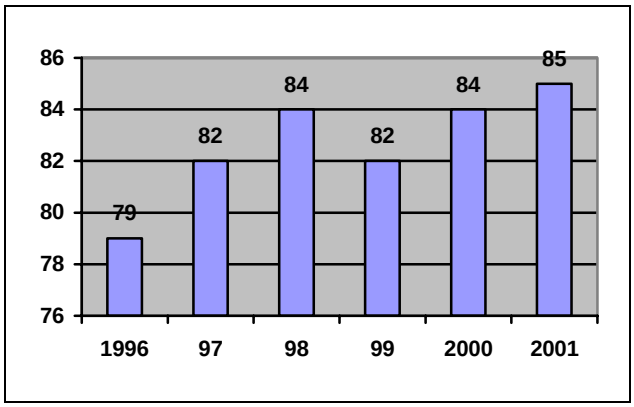


Table11. Estimates-2002 at a glance, India[2]

Population	1 049 549473
Global rank (by est. No. of cases)	1
Incidence (all cases/ 100 000 pop)	168
Incidence (new ss+/100 000 pop)	75
Prevalence (SS+/ 100 000 pop)	156
TB mortality per 10 000 population	37
% of adult (15- 49y) TB cases HIV+	4.6
% of new cases multi-drug resistant	3.4

Current Status of Tuberculosis Control:

Through the Revised National Tuberculosis Control Programme (RNTCP) introduced by the Government of India in 1997, DOTS expansion increased from 2% of the population in 1997 up to 52% in 2002, making India the second largest DOTS programme in the world. Consistently high treatment success rates under DOTS (85% in 2001 cohort) have been maintained. Case detection needs to improve from the current 50% [2, 12].
The state Governments are legally responsible for health care but TB is one of several health Programmes supported by central government funds. All 35 states have a state TB Cell responsible for planning, training monitoring, and supervision of TB control activities. In each district, a District TB Centre works as the nodal centre for TB control activities. [2]
The RNTCP has ensured that effective and high quality TB services are maintained throughout the rapid expansion phase. Strict appraisal criteria have been applied to each new district to promote quality and stimulate local efforts to ensure the appropriate level of preparedness prior to the introduction of DOTS. Dissemination of standardized guidelines on diagnosis and treatment to professional societies, training of thousands of doctors, laboratory technicians and allied health staff has ensured that effective technical standards were maintained. Two supervisory levels were introduced at state level and prompt and accurate reporting ensured[12].

Following recent rapid expansion at a rate of about 10 million people per month 740 million people (almost 70% of the total population) in 397 districts from 25 states/union territories had access to DOTS services by August 2003 and expecting to cover 100% of the population by 2005[2].

Major action taken to expand/sustain DOTS (2002-2003): [2]

Major steps have been taken to sustain the high performance of the programme continuing with its expansion.

Efforts were focused on securing funds, enhancing the management and planning capacity at central and states levels, on securing quality drugs, improving the quality assurance system for smear microcopy and improving epidemiological surveillance.

A national task force, and 7 zonal task force groups were established in 2002 to involve medical colleges in NTP activities. Seven medical colleges have been designated zonal RNTCP centres. By the end of 2003, at least 128 medical colleges were working with the RNTCP.

RNTCP published guidelines on involvement of NGOs and private practitioners in DOTS Programmes.

With assistance from WHO, 14 PPM DOTS projects have been implemented in large urban areas throughout the country (India)

A joint RNTCP/NACO action plan to develop TB/HIV collaborative activities has been implemented in 6 states that have high prevalence.

TB/HIV collaborative bodies have been established at both national and state levels.

Pilot testing of a referral system is being done. Through referral system HIV positive patients who are TB suspects, and TB patients who are HIV suspects will be cross-referred between HIV voluntary counseling and testing centres (VCTC) and designated TB microscopy centres.

To ensure drug quality a consulting agency was hired in 2003 to monitor drug quality.

A nationwide tuberculin survey to assess the prevalence of infection was completed during 2003. These data will be helpful for providing separate estimates of TB incidence.

Future actions needed to expand /sustain DOTS are to: [2]

- Implement the RNTCP in the remaining parts of the country
- Sustain Government commitment and funding for the RNTCP; mobilize additional resources for continued expansion.
- To achieve case detection targets continued efforts are neded to involve all public and private health care facilities and practitioners, including NGO,s and the corporate sector and to patients who may have poor access to care homeless & migrants..

Financing:

Major funding partners for the RNTCP are the World Bank, USAID, the DFID (UK), (in the state of Andhra Pradesh) and Danish International Development agency (in the state of Orissa). In Orisa GDF is providing anti-TB drugs. Additional funding will be available through the GFATM. The budget for each year of implementation of TB control activities during 2002-2006 is estimated between US$ 35-40 million. 80% of the total cost is covered by the government (through either loans or domestic sources of revenue [2, 12].

MALDIVES:

Indicators & Country Information, 2002:

Population: 309000*

Estimated new cases of TB: 145, equivalent to 47 per 100, 000 population*

Estimated new cases of smear positive TB: 65 equivalent to 21 per 100 000 population

Estimated new cases of TB attributable to HIV: 00**

Prevalence of MDR -TB in cases not previously treated: 00 (country report to STC)

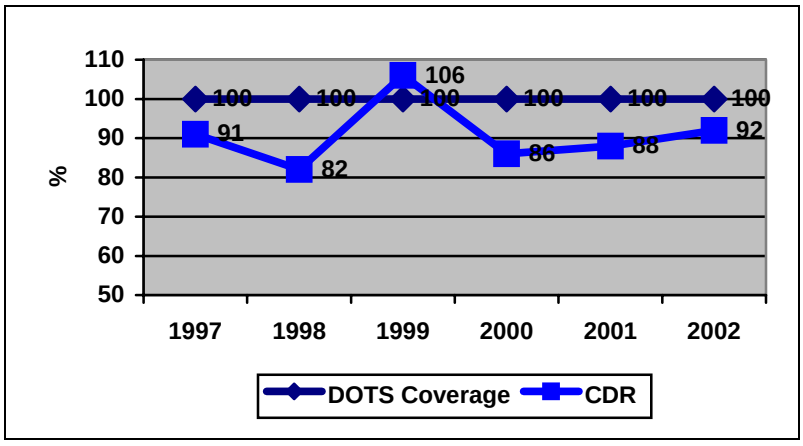
DOTS population coverage: 100% *

Smear positive cases notified under DOTS (2001): 59, equivalent to 92% case detection rate. *

Smear positive cases treated successfully under DOTS (2001): 57 equivalent to 97 % treatment success rate.*

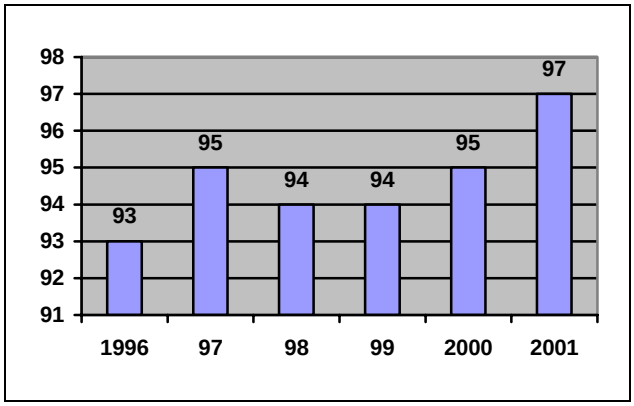
* Ref No. 2, ** Ref 15 (NTP Maldives)

Figure 9. DOTS Coverage and Case Detection Rates, Maldives, 1997-2002



(When population coverage is 100% CDR and DDR are equal)

Figure 10. Treatment success rate (%) of cohort 1996-2001, Maldives



According to data received by STC
Period 01 January to 31 December 2003 cases Registered

No. of TB Patients all types =	137
No. of SS+ TB cases =	71
TB patients reported to have HIV infection =	00
SS+ TB patients reported to have HIV infection=	00

Current Status of TB Control: [12, 15]

The right to health of all citizens is the guiding principle which has shaped the health policy in the Maldives. Priority has been accorded to improve accessibility, affordability and quality of care in order to meet the increasing demand for health services by the rapidly growing population. TB is still one of the major public health problems. The TB Control programme was established in 1962 *(Situation of TB in Maldives, paper prepared by NTP Manager, Maldives and shown during country visit).* The country adopted the DOTS strategy in 1994 and achieved 100% population coverage in 1996. Actually from the beginning of TB control Programme Maldives was providing Anti TB treatment under direct supervision *(informed at a discussion during visit to Maldives for observation of TB and HIV/AIDS control activities).* The private sector has been well integrated with the TB Control programme.

Facilities to perform mycobacterial cultures were made available at Indira Gandhi Memorial Hospital in 1997 and microscopy centres have been established at all regional hospitals. The Maldives was the first country in the Region to reach global targets. Treatment success rates have been sustained at around 95%, and for 2001 cohort it was 97%. The case detection targets were reached in 1996. No case of drug resistance has been reported since 1997. [15]

The main thrusts of the TB Control Programme in the current 5-year plan is infrastructure and human resource development for intensified case finding, early case detection, strengthening the microscopy network so as to improve access to diagnostic services and social mobilization for increased community involvement and utilization of available services.

Progress made in 2002 ***(Information collected from NTP Manager during Country visit for observation of TB and HIV/AIDS control)***

1. INH Prophylaxis initiated officially on world TB day 24 March 2002
2. New building with better space-facility for Central Chest Clinic is under construction.
3. For strengthening the technical capacity adequate training and workshop were organized
4. To increase the awareness level of general people some special WHO articles on TB were translated, printed and distributed throughout the country.

Constraints ***(Information collected from NTP Manager during country visit for observation of TB and HIV/AIDS control)***

1. Lack of skill manpower at all levels of the Programme
2. Insufficient access to microscopy services in more remote islands
3. No established supervisory mechanisms or quality assurance of smear microscopy
4. Low community awareness and an overwhelming stigma for tuberculosis and its treatment
5. Treatment seeking by TB patients from other countries where the treatment is usually irregular and incomplete

Future actions needed to expand/sustain DOTS and to improve TB control are to: [6]

- Intensify case detection and case management
- Undertake targeted case finding including active contact tracing to reduce diagnostic delay
- Continue to update health workers and doctors in the atolls
- Continue to ensure that patients diagnosed in the private sector will be referred to DOTS centres within the country.
- Continue monitoring and supervision of DOTS implementation
- Decentralize TB diagnostic (microscopy) services to regional level and preferably to atoll level.
- Maintain stocks of anti-TB drugs at atoll level
- Improve technical capacity at the central level, particularly for supervision
- Conduct a baseline survey to correctly identify the magnitude of the TB situation in the country.

Financing:

The TB Control Programme currently receives some financial and technical support from WHO. The average budget estimate for each year of implementation for the next 5- year plan is US $ 0.2 million, most of which is met from the government budget for health[12].

NEPAL:

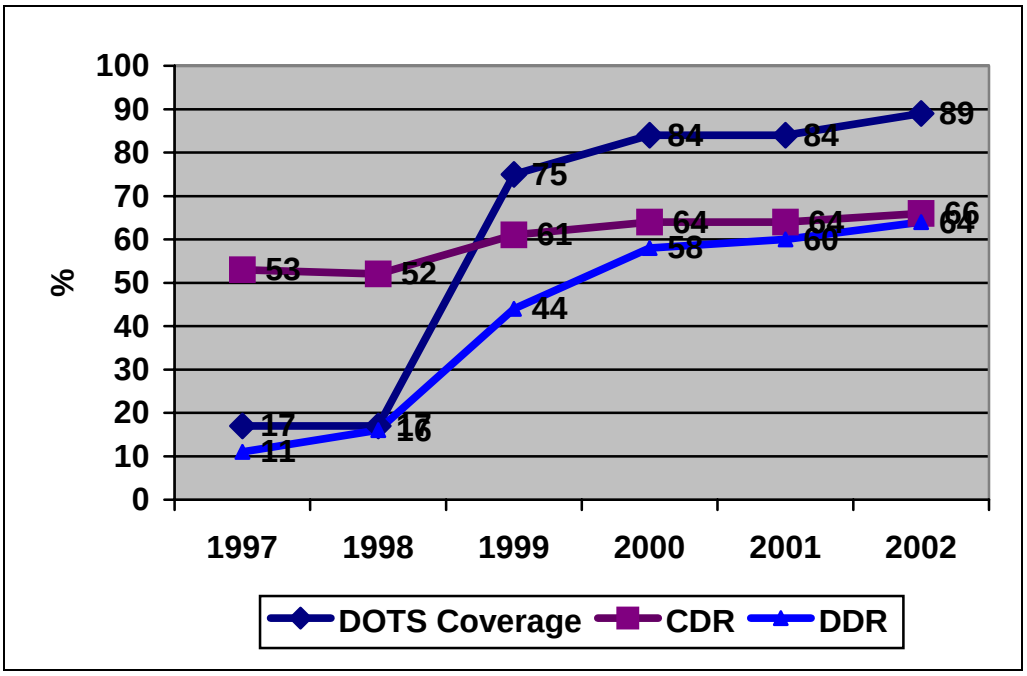
Indicators & Country Information, 2002:

Population: 24609000*
Estimated new cases of TB: 46714 equivalent to 109 per 100, 000 population*
Estimated new cases of smear positive TB: 20931 equivalent to 85 per 100 000 population*
Estimated new cases of TB attributable to HIV: 1% **
HIV prevalence among TB patients (Sentinel survey, Nepal, 2001/2002):2.4% [16]
Prevalence of MDR -TB in cases not previously treated: 1% ** to 1.3%***
DOTS population coverage: 89%; CDR=66%, DDR=64%*

Smear positive cases treated successfully under DOTS (2001): 10961, equivalent to 88 % treatment success rate. (Registered cases= 12456)*

* Ref No 2, ** Ref No 12 and *** Ref 14

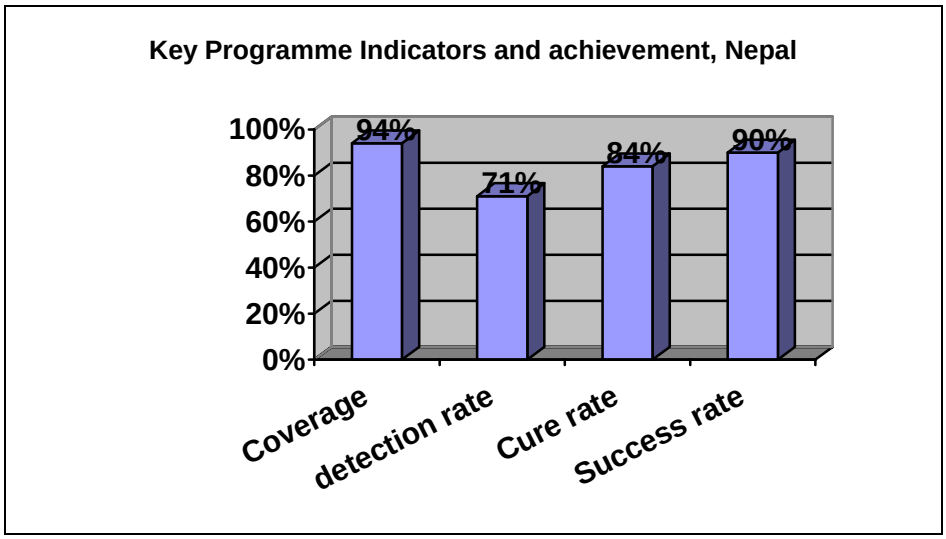
Figure 11. DOTS Coverage and Case Detection rates, Nepal 1997-2002



NB. DOTS coverage in 2002= 89%, July 2003= 94% (Source Annual Report 2002/2003, NTP Nepal)

According to Annual Report 2002/2003, NTP, Nepal as of July 2003 the DOTS coverage, case detection rate and treatment success rate are shown in figure 12.

Figure 12. Key programme indicators & achievement as of July 2003 [10]



Current Status of TB Control:

Following a review of the national tuberculosis programme in 1994, DOTS demonstration sites were established in April 1996. Impressive achievements have been made since then. The NTP has rapidly expanded the DOTS strategy from 1.7% in 1996 to 94% by July 2003 and as end of 2002, it was 89%. By July 2003 the case finding and treatment success rates reached to 71% and 90% respectively crossing the WHO target for TB control by 2005. DOTS is now (July 2003) running through the integrated general health services in 335 treatment centres and 1407 sub centres throughout the country. [10]

Further expansion of the programme covering the more inaccessible mountainous areas poses a challenge. Different types of approaches have been adopted in those areas. DOT by community volunteers, family members and I/NGOs has been found effective in some hill and mountain districts. The NTP relies heavily on donor support both for implementation of the programme and for drugs. Although the national budget has increased over the years, the sustainability of current efforts will depend on securing adequate external resources. A strong community base for DOTS has been achieved through the establishment of district and village DOTS committees that have been set up involving people outside the health sector. Links with the private sector in the Kathmandu valley has led to up to 15% of all TB cases notified being referred from private practitioners and private clinics. The refereeing rate of TB cases

from the private sectors to the NTP has increased remarkably by this time. A technical task force comprising the MOH, other governmental and non-governmental sectors and medical associations, has been created to develop policy, assist with logistics and coordinate between partners. Cross-border disease control is being initiated. [10, 12]

Future actions needed to expand/sustain DOTS are to: [12]

- Secure adequate external resources from donor countries and from NGOs.
- Ensure full staffing at all health facilities (especially at microscopy centres).
- Establish quality control for regional laboratories.
- Forge partnership with the private sector, medical schools and industry to further enhance DOTS implementation.
- Evaluate the impact of HIV/AIDS on the TB epidemic.
- Increase access to DOTS in the hard-to access mountainous regions.
- Establish, through bilateral and multilateral consultations, cross-border disease control services including DOTS in the border districts.
- Human Resource Development (HRD)

Financing:

The Nepal National TB control programme has benefited from inputs from several donor partners and the recently established GFATM. The budget estimated for each year of implementation of TB control activities in the national plan for TB control averages US$ 4.5 million[12].

PAKISTAN:

Indicators & Country Information, 2002:[2]

Population: -149911000

Estimated new cases of TB: 271745, equivalent to 181 per 100, 000 population

Estimated new cases of smear positive TB: 122174 equivalent to 81 per 100 000 population

DOTS population coverage: 45%;

Case detection rate =13.3%,

DOTS detection rate =12.6%

Smear positive cases treated successfully under DOTS (2001):4813, equivalent to 77% treatment success rate. (Registered cases =6251)

Figure 13. DOTS Coverage and Case Detection rates, Pakistan, 1997-2002

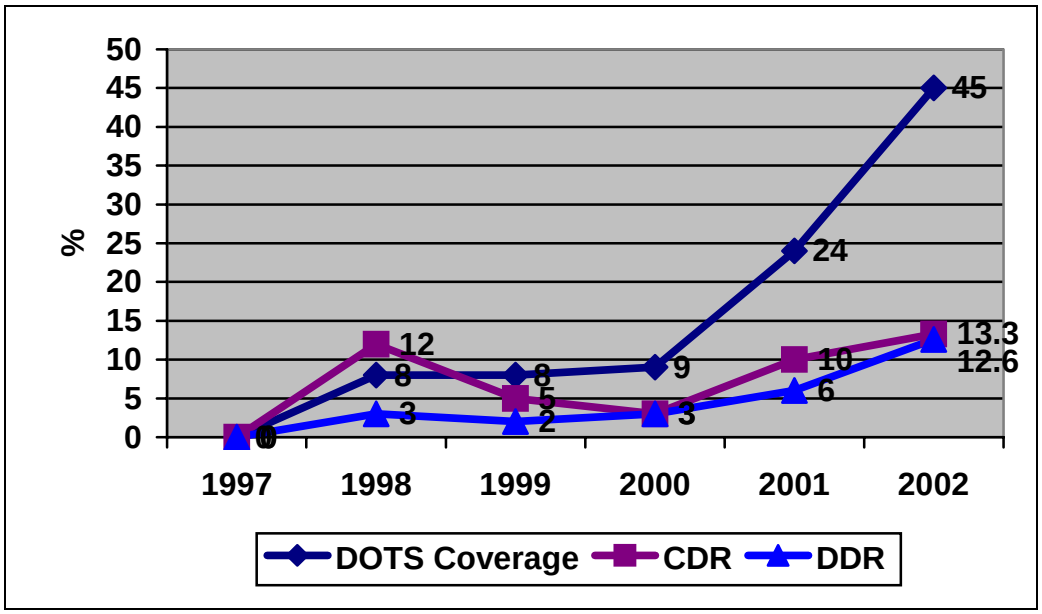


Figure 14 Treatment success rate (%) of cohort 1997-2001, Pakistan

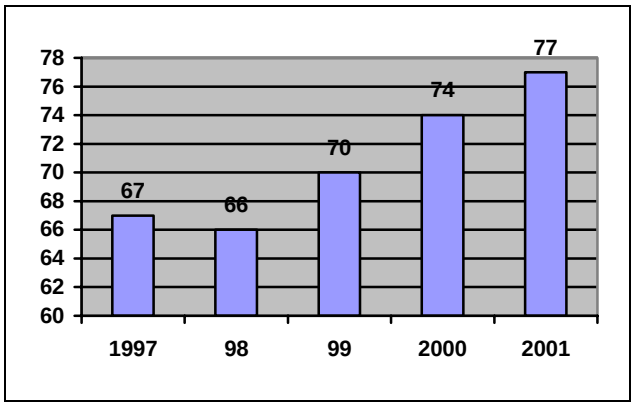


Table12. Estimates-2002 at a glance, Pakistan[2]

Population	149910783
Global rank (by est. No. of cases)	6
Incidence (all cases/ 100 000 pop)	181
Incidence (new ss+/100 000 pop)	81
Prevalence (SS+/ 100 000 pop)	178
TB mortality per 10 000 population	45
% of adult (15- 49y) TB cases HIV+	.07
% of new cases multi-drug resistant	9.6

Current Status of TB Control:

Pakistan consists of four provinces (Balochistan, NWFP, Punjab, Sindh), besides some federally controlled areas, Northern Areas and the states of Azad Jammu and Kashmir. Each Province is divided into districts, which are the main administrative unit with an average population of more than one million. The federal government has constituted a third tier of district governments effective from August 14, 2001 and has devolved authority and responsibility to the district governments for all public activities, including health care services. Developed set up would provide an opportunity to increase intra-sectoral and inter- sectoral coordination among different health programmes/components and various sectors at the district level.[17] However, because devolution is still in

its early stage districts have not yet developed the necessary capacity to deliver care and community health services need to be strengthened more.[2] Pakistan adopted the DOTS strategy in 1995 and started DOTS demonstration activities in some areas. DOTS expansion began in earnest after 2000 when the government rehabilitated provincial TB programmes through the World Bank's Social Action programme project II (SAPP II), a social sector-wide project that includes health. DOTS is continuing to expand and the overall TB control system is steadily improving.[2] The NTP has a strategic plan for DOTS expansion for 2001-2005, and the MoH has established a National Interagency Coordination Committee (NICC). The government of Pakistan issued the Islamabad Declaration to announce TB as a national emergency in March 2001 in an effort to gain support for NTP activities. In 2002 Pakistan made steady progress towards achieving the objectives laid out in their strategic plan, which encompasses interagency and intersectoral coordination. Balochistan, and Sindh covered all the districts in these provinces during 2003. Punjab-the largest province in Pakistan –is planning to achieve full DOTS coverage by 2005 [2, 8, 17].

The smear positive case detection rate under DOTS is increasing rapidly; it was 2% in 1999 and reached 13% in 2002.

The treatment success rate under DOTS is also increasing, though slowly and reached 77% for the 2001 cohort. The main reason for the low treatment success is high default rate (13%). [2] A laboratory referral network has been established but the quality of laboratory work is to be assured further. In efforts to improve social mobilization, sociologists and a research officer have been recruited. Pakistan has a national TB/HIV coordinating body, and there is an HIV surveillance system among TB patients [2].

Constraints/challenges to achieving targets [2, 17]

- Risk that TB will not remain a priority following the shift of TB planning authority to district level
- Inadequate logistic arrangements for monitoring and supervision at national and provincial levels.
- Capacity building (Human Resource Development) at various levels
- Implementation of DOTS in large cities/urban areas
- Involvement of tertiary care hospitals and medical college hospitals in implementation of DOTS strategy.

Remedial actions needed[2]

- Maintain political will especially at district level during decentralization
- Ensure sufficient logistic arrangements for monitoring and supervision at national and provincial levels
- Recruit and retain staff who will be trained in management , supervision, and planning
- DOTS orientation Training for private sector practitioners, Doctors of Medical college hospitals and Teaching Hospitals

Financing

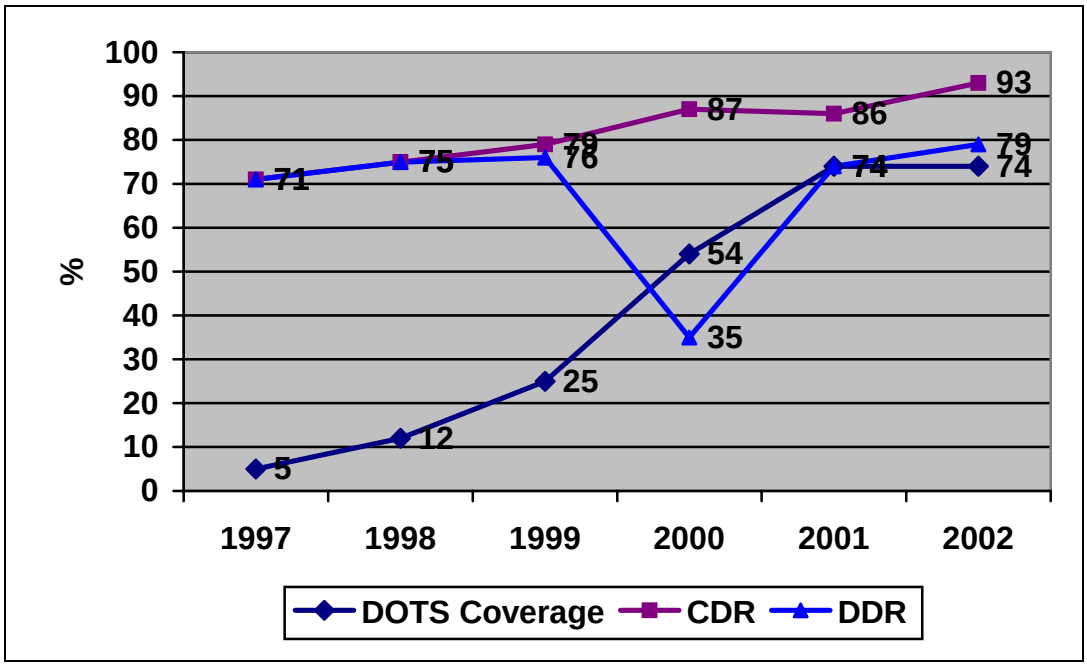
The total NTP budget for the fiscal year 2003 (from 1 July) is US$ 5.9 million of which US $ 2.6 million from Government fund and additional supported by USAID. No funding gap expected for 2003. The GDF continued its support to drug procurement during 2003 [2].

SRI LANKA:

Indicators & Country Information, 2002: [2]

Population: 18910000
Estimated new cases of TB: 10280, equivalent to 54 per 100, 000 population
Estimated new cases of smear positive TB: 4623 equivalent to 24 per 100 000 population
DOTS population coverage: 73 %
Case detection rate =93 %
DOTS detection rate=79%
Smear positive cases treated successfully under DOTS (2001): 2 966, equivalent to 80 % treatment success rate (Registered cases= 3708).

Figure 15. DOTS Coverage (according to country report) & Case Detection rates (according to Global TB Reports), Sri Lanka, 1997-2002

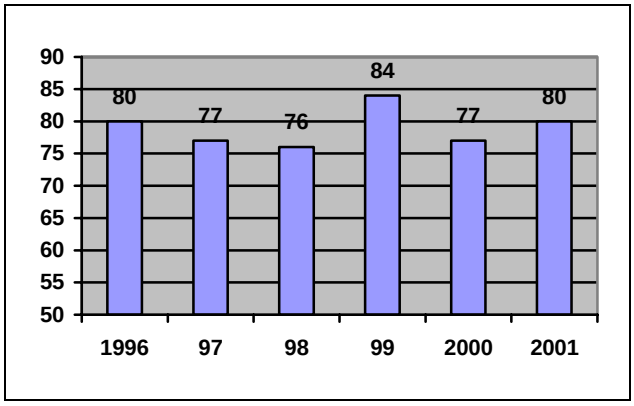


DOTS coverage trends according to WHO global report (mentioned in Table 2) and NTP are given below:

Table 13.
DOTS coverage(%) trend of Sri Lanka according to WHO global report and according to information collected from NTP during country visit for observation of TB and HIV/AIDS activities, date 11-13 August 2004

source	1997	1998	1999	2000	2001	2002	2003
WHO Report	94	95	95	64	64	73	-
NTP , Sri Lanka	5.2	11.97	25.39	54.3	74.23	74.23	80.26

Figure 16. Treatment success rate (%) of cohort 1996-2001, Sri Lanka



Current Status of TB Control: [2, 18]

Sri-Lanka has made considerable progress with DOTS expansion**.** DOTS has been made available to 80% of the population (according to NTP data). The National Programme for Tuberculosis Control and Chest Diseases (NPTCCD) is a decentralized unit headed by the Director/NPTCCD and functions under the Deputy Director General Public Health Services (DDGPHS 1) since 2001.

The NPTCCD carries its function through a network of District Chest Clinics, Branch Chest Clinics, Chest Hospitals and Chest wards in close coordination with the general health services giving high priority for TB control activities.

With the devolution of health services to the district level in 1989, TB Control activities were adversely affected for several reasons. Improvements in the quality of DOTS services are now being planned through infrastructure development, strengthening of the

technical capacity both at the central level and at the district chest clinics, developing an effective microscopy network and including other health facilities and providers not previously involved in DOTS implementation. The treatment success rate reported for smear-positive cases notified in DOTS areas in 2001 was 80%. The default rate is high at an overall 13% (according to 2002 data). Improvements in infrastructure, strengthening of the staffing pattern and technical capacity at the central unit and at the district chest clinics, full coverage with ambulatory DOTS, ensuring completeness of reporting and improvements in the ways to undertake default tracing among internally displaced and urban populations have been planned.

Future actions needed to expand/sustain DOTS are to:[12,18]

- Strengthen political commitment to TB Control; improve coordination between the preventive and curative arms of the health system at provincial and district levels
- Strengthen technical capacity for managerial, coordination and monitoring activities
- Improve recording and reporting and supervision, especially at districts level
- Improve referral and late patient tracing mechanisms to reduce defaults especially in poorly performing districts.
- Establish ambulatory DOTS in all districts by 2005
- Improve community participation through IEC activities.

Financing:[12]

The estimated budget for each year of implementation of TB Control activities as envisaged in the proposed 5 year-plan averages US $ 2-2.5 million. At present there is no funding gap. Sri Lanka is getting funds from GFATM, World Bank.

5. SAARC / STC Support in the (SAARC) Region:

The South Asian Association for Regional Cooperation (SAARC) comprises Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. SAARC is an Association based on the consciousness that in an increasingly independent world, the objectives of peace, freedom, social justice and economic prosperity are best achieved in the South Asian region by fostering mutual understanding, good neighbourly relations and meaningful cooperation among the Member States which are bound by ties of history and culture[19].

SAARC Tuberculosis Centre (STC) is a Regional Centre of eminence working for prevention and control of TB and HIV related Tuberculosis disease in the region by coordinating the efforts of the National Tuberculosis Control Programme (NTPs) of Member Countries and functioning since 1992.

The Centre has provided a platform for interaction to member countries for exchange of information and experiences, to identify areas of common interest, weak areas in the programme those can be strengthened by mutual cooperation and collective wisdom. The centre has helped member countries in formulating regional strategy with country specific action plan, independent evaluation of the programme performance and supported NTPs in terms of Training, Research, Management capability, IEC , Quality assurance in diagnosis and getting support from other agencies like Canadian International Development Agency (CIDA) and World Health Organization (WHO).

The NTP managers find an opportunity of regular meeting since most of them (NTP managers) are the members of the Governing Board of STC, which meets at least once in a year. “Exchange of information about NTP of Member Countries” is a common agenda of discussion in the Governing Board meetings. Once, the Board felt the need to hold a formal meeting of NTPs with the objective to formulate a regional strategy for TB control to identify priority areas in the programme for strengthening by regional cooperation. According to the recommendations STC has been providing support to member countries on the following areas.

- Implementation and expansion of successful DOTS
- Training and Research
- Collection and Dissemination of Information & Experience
- TB and HIV co-infection
- Involvement of private sector in TB control
- Emergence of MDR-TB
- Community Participation in TB control

Since the beginning till December 2003 STC conducted several regional trainings, Seminars, meetings and workshops involving SAARC member countries. Those trainings were on different subjects e.g., TB control, TB Bacteriology, IEC for TB & HIV/AIDS and data management for durations varying from 2 days to 2 wks.

Assistance was provided to member countries to develop network of laboratories for smear microscopy and quality assurance in diagnosis, and epidemiological networking. Through SAARC Canada Regional TB and HIV/AIDS project, Computers with necessary peripherals including Internet service facilities have been provided to all the member countries.

One of the major functions of STC is to disseminate update information on TB, HIV/AIDS and TB/HIV co-infection. In this regards, as of end 2003 STC published 8 Booklets/brochure and 12 issues of six- monthly News letters. During the year 2003 the centre published 18 different documents including 2 issues of six-monthly News Letter. Among these, 10 documents were published in collaboration with Canadian International Development Agency (CIDA). The list of Published documents in the year 2003 is given in Annex II.

Being placed in Nepal, STC is taking more opportunity to provide technical support and close cooperation to the NTP Nepal. In addition to that STC professionals took part in the Nepal National TB Control Programme Review in the year 2003.

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Annex I

Country Information:
TB notification, detection and DOTS coverage, SAARC region ,2002

Countries	Population	Notified TB				Estimated TB				Case detection rate (%)	
		all cases		New SS+		all cases		New SS+		all cases (c/g)	New SS+ (e/i)
		#	rate (c/b)	#	rate (e/b)	#	rate (g/b)	#	rate (i/b)		
Bangladesh	143809000	81822	57	46771	33	317839	221	143004	99	26	33
Bhutan	2190000	1089	50	364	17	2577	118	1159	53	42	31
India	1049549000	1060951	101	395833	38	1761339	168	787162	75	60	50
Maldives	309000	125	40	60	19	145	47	65	21	86	92
Nepal	24609000	30359	123	13714	56	46714	190	20931	85	65	66
Pakistan	149911000	52172	35	16265	11	271745	181	122174	81	19	13
Sri- Lanka	18910000	8939	47	4297	23	10280	54	4623	24	87	93
Total	**1389287000**	**1235457**	89	477304	34	**2410639**	174	1079118	78	51	**44**
a	b	c	d	e	f	g	h	i	j	k	L

Countries	Population	DOTS coverage		DOTS Notifications				DOTS detection rate		
				All cases		New SS+		Estimated	Notified	DDR
		Population	% (c/b)	#	rate(e/b)	#	rate(g/b)	#	#	% (j/i)
Bangladesh	143809000	136618550	95	71635	50	45701	32	143004	45701	32
Bhutan	2190000	2190000	100	1089	50	364	17	1159	364	31
India	1049549000	545765480	52	549700	52	245135	23	787162	245135	31
Maldives	309000	309000	100	125	40	60	19	65	60	92
Nepal	24609000	21902010	89	29423	120	13307	54	20931	13307	64
Pakistan	149911000	67459950	45	47754	32	15331	10	122174	15331	13
Sri- Lanka	18910000	13804300	73	7400	39	3643	19	4623	3643	79
Total	**1389287000**	**788049290**	**57**	**707126**	**51**	**323541**	**23**	**1079118**	**323541**	**30**
a	b	c	d	e	f	g	h	i	j	k

Source: Global TB control, WHO report 2004

Annex II

Documents Published by SAARC TB Centre in the year 2003:

1. Articles on Tuberculosis and HIV/AIDS in the SAARC Region, Vol. I
2. Report on HIV/AIDS in the SAARC Region
3. Report on Commercial Sex Workers in SAARC Region
4. Report on Detail Situation Analysis on QA on Sputum Microscopy in Nepal
5. Report on Gender Issue in Tuberculosis and HIV/AIDS in the SAARC Region
6. Report on Tuberculosis in the SAARC Region
7. Report on TB and HIV/AIDS Co-epidemic in the SAARC Region
8. Articles on TB and HIV/AIDS in the SAARC Region Vol. II
9. Report of 1st Round of External Proficiency Testing of Sputum Smear Microscopy in National TB Reference Lab in SAARC Region
10. Situation Analysis of TB, HIV/AIDS and TB/HIV Co-infection in SAARC Region
11. Report on World TB Day 2003
12. SAARC Guidelines for Partnership with Schools in Prevention & Control of Tuberculosis
13. SAARC Guidelines for Partnership with Media in Prevention & control of Tuberculosis
14. SAARC Newsletters (both numbers)
15. Annual Report 2002
16. Directory of TB Institutions and Specialists in SAARC Member Countries.
17. Information about TB (Pamphlet) (Nepali & English version)

NB. Serial No. 1-10 were published in collaboration with Canadian International Development Agency (CIDA) and the rest by SAARC TB Centre alone

Annex III

Some Information from GTB Report 2004:

- The global incidence rate of TB is growing at approximately 0.4% per year, much faster in sub-Saharan Africa and in countries of the former Soviet Union.
- Number of countries implementing DOTS:
  - 2002=180
  - 2001= 155
  - 2000= 148
- By the end of year 2002, 69% of the world's population lived in parts of countries providing DOTS
- DOTS programmes notified 3 million new TB cases (3/8.797 =14%) of the estimated incidence (in 2002)
  - Of which 1.4 million were Smear-positive
    - 1.4 million = 37% of the estimated incidence, 3.9 million.

- Treatment success under DOTS for 2001 cohort was 82% on average, the same as for the 2000 cohort.
- 18 countries had reached targets for case detection and cure by end of 2002, but Vietnam was the only HBC among them.
- The constraints on DOTS expansion most commonly identified were:
  - Lack of qualified staff
  - Poor monitoring and evaluation
  - Inadequate health infrastructure
  - Weak laboratory services
  - The failure of DOTS Programme to engage private practitioners and other public providers
  - Ineffective decentralization

- Case detection rate:

$$\frac{\text{annual new SS+ notifications (country)}}{\text{estimated annual new SS+ incidence (country)}}$$

- DOTS detection rate:

$$\frac{\text{annual new SS+ notifications (under DOTS)}}{\text{estimated annual new SS+ incidence (country)}}$$

- Case Detection Rate in DOTS area (this indicator is used by WHO, SEARO, New Delhi)

$$\frac{\text{annual new SS+ notifications (under DOTS)}}{\text{estimated annual new SS+ incidence (in DOTS area)}}$$

Annex IV

Definitions of Tuberculosis Cases:

1. **Case of tuberculosis**: A patient in whom tuberculosis has been bacteriologically confirmed, or has been diagnosed by a clinician.
   Note: Any person given treatment for tuberculosis should be recorded.

2. **Definite case**: patient with positive culture foe the *Mycbacterium tuberculosis* complex. In countries where culture is not routinely available a patient with 2 sputum smears positive for acid-fast bacilli (AFB+) is also considered a definite case.

3. **Smear-positive pulmonary case**: At least two initial sputum smear examinations (direct smear microscopy) AFB+, or one sputum examination AFB+ and radiographic abnormalities consistent with active pulmonary tuberculosis as determined by the treating medical officer; or one sputum specimen AFB+ and culture positive for M. tuberculosis.

4. **Smear-negative pulmonary case**: Pulmonary tuberculosis not meeting the above criteria for smear-positive disease. Diagnostic criteria should include: at least 3 sputum smear examination negative for AFB; and radiographic abnormalities consistent with active pulmonary TB; and no response to a course of broad-spectrum antibiotics; and decision by clinician to treat the patient with full course of anti-tuberculosis therapy; or positive culture but negative AFB sputum examination.

5. **Extra pulmonary case**: Patient with tuberculosis of organs other than the lungs e.g. pleura, lymph nodes, abdomen, genito-urinary tract, skin, joints and bones, meninges. Diagnosis should be based on one culture positive specimen or histological or strong clinical evidence consistent with active extra pulmonary disease followed by a decision by a clinician to treat with full course of anti-tuberculosis chemotherapy. Note: a patient diagnosed with both pulmonary and extra pulmonary tuberculosis should be classified as a case of pulmonary tuberculosis.

6. **New case**: Patient who has never had treatment for tuberculosis, or who has taken anti-tuberculosis drugs for less than 1 month.

7. **Relapse case:** Patient previously declared cured but with a new episode of bacteriologically positive (sputum smear or culture) tuberculosis.

8. **Retreatment case**: Patient previously treated for tuberculosis whose treatment failed, who defaulted (treatment interrupted, see definitions of treatment outcomes), or who relapsed.

9. **Chronic case**: Patient who is sputum positive at the end of a retreatment regimen.

Annex V

Definitions of Treatment Outcomes:

1. **Cured**: initially smear-positive patient who has a negative sputum smear in the last month of treatment, and on at least one previous occasion.*

2. **Completed treatment**: Patient who has completed treatment but does not meet the criteria for cure or failure.

3. **Died**: Patient who died during treatment, irrespective of cause.

4. **Failed**: Smear-positive patient who remained smear-positive, or became smear-positive again, at least 5 months after the start of treatment.

5. **Interrupted treatment (defaulted)**: Patient who did not collect drugs for 2 months or more at any time after registration.

6. **Transferred out**: Patient who was transferred to another reporting unit and for whom treatment results are not known.

7. **Successfully treated**: The sum of cases that were cured and that completed treatment (expressed as a percentage of the number registered in the cohort).**

* Some European countries define cure in terms of culture conversion, rather than sputum smear conversion.
** A cohort is a group of patients diagnosed and registered for treatment during a given time period, usually one quarter of a year.

Talk about TB. Tell your neighbour, tell your friends about DOTS, because no effort is too small!!

A rickshaw puller in Bangladesh proves this, the rickshaw puller was a TB patient. Within 15 days of being on DOTS, he began bringing TB patients to the clinic on his rickshaw, while coming for his own medication .To day he is cured of TB, but continues to take TB patients to the clinic. He says he was inspired to share his experience with TB patients while on their trips to the DOTS centre. Being a cured patients, his own experience with DOTS and treatment made him a credible advocate for TB control.

May be placed at inside of the back page

Available information form country report on 2003 data

Country	DOTS Coverage	Treatment success Rate 2002 cohort	Case Detection Rate
Bangladesh *	95% 99%	84% 84%	38% 41%
Bhutan			
India			
Maldives	100%	96%	91%
Nepal (July 2003)	94%	90%	71%
Pakistan	63%	72% **	17%
Sri- Lanka	80%		

- Data presented by Dr. Jalal Uddin, PM TB, Bangladesh in the TB/HIV co-infection workshop, 6-8 July. 2004, Kathmandu.

Lower row data presented by Dr. karim uddin Bhuiya, Dy Director during the workshop on TB drug management & MDR-TB on 29 -31 July 2004