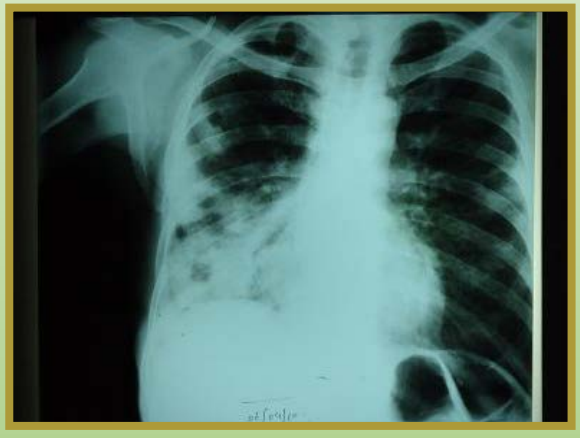
SAARC EPIDEMIOLOGICAL RESPONSE ON TUBERCULOSIS

2014



SAARC Tuberculosis and HIV/AIDS Centre [STAC]

SAARC EPIDEMIOLOGICAL RESPONSE ON TUBERCULOSIS

2014

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Foreword

Tuberculosis remains a public health problem in the world despite the availability of extremely effective treatment regimens. Moreover, multi drug resistant TB and HIV are emerging threats for tuberculosis control. The SAARC region continues to make a considerable contribution to the global efforts towards the elimination of TB Control.

This is the twelfth Report on Tuberculosis Situation of the SAARC Region and an update of the previous one. It includes information on incidence, prevalence and mortality along with the population covered by DOTS, case detection and treatment outcome of eight member countries of SAARC and challenges ahead.

This report covers the information of the year 2013 and has been prepared on the basis of information collected from member countries during the year 2014 and by reviewing other documents including Global TB Control Report WHO, 2014.

This report indicates that remarkable progress in TB control has been made in this region since the introduction of the DOTS strategy. Major challenges are however there in control of TB, such as sustaining quality in diagnosis and case management, improving the quality of implementation and making it more accessible to people in order to increase case detection, strengthening human resources in terms of numbers and technical capacity, strengthening laboratory network and improving EQA and supervision, establishing effective coordination between NTP and NACP and tackling migration & cross border issues.

Documentation of achievements from implemented activities is essential for future planning and moving the programme forward. Dissemination of such information is also important for the inspiration of the TB control programmes and others working for control of TB. I am confident that this document "*SAARC Epidemiological Response on Tuberculosis - 2014*" will serve these purposes.

I would like to thank the programme managers and experts within SAARC member countries, who have generated and shared the epidemiological data that has been used in this report.

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

Dr. Sharat Chandra Verma
Director

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Abbreviations

ACSM	:	Advocacy, Communication and Social Mobilization
AIDS	:	Acquired Immuno - Deficiency Syndrome
APHI	:	Afghan Public Health Institute
ART	:	Antiretroviral Treatment
ARTI	:	Annual Risk of Tuberculosis Infection
BCG	:	Bacille-Calmette-Guérin
BHC	:	Basic Health Centre
BPHS	:	Basic Package of Health Services
CB	:	Community-Based
CDR	:	Case Detection Rate
CHC	:	Community Health Centers
CPT	:	Co-trimoxazole Preventive Therapy
DDG	:	Deputy Director General,
DGHS	:	Directorate General of Health Services
DMCs	:	Designated Microscopy Centres
DMIS	:	Drug Management Information System
DOTS	:	Directly Observed Treatment Short course
DRS	:	Drug Resistance Survey
DST	:	Drug Susceptibility Testing
EP	:	Extra-Pulmonary
EPHS	:	Essential Package of Health Services
EQA	:	External Quality Assurance
FDCs	:	Fixed-Dose Combination Drugs
FLD	:	First Line Drug
GDF	:	Global Drug Facility
GENETUP	:	German Nepal Tuberculosis Project
GLC	:	Green Light Committee
GoIRA	:	Government of Islamic Republic of Afghanistan
HBCs	:	High-Burden Countries
HIV	:	Human Immunodeficiency Virus
HNPSP	:	Health and Population Sector Program
HRD	:	Human Resources Development
HRM	:	Human Resource Management
ICD	:	International Classification of Diseases

IEC	:	Information, Education and Communication
IGMH	:	Indira Gandhi Memorial Hospital
IPT	:	Isoniazid Preventive Therapy
IRLs	:	Intermediate Reference Laboratories
IUATLD	:	International Union Against Tuberculosis and Lung Disease
JICA	:	Japan International Cooperation Agency
LPA	:	Line Probe Assay
M&E	:	Monitoring and Evaluation
MBDC	:	Mycobacterial Disease Control
MDGs	:	Millennium Development Goals
MDR	:	Multi Drug Resistance
MoH	:	Ministry of Health
MoPH	:	Ministry of Public Health
NATA	:	Nepal Anti Tuberculosis Association
NGO	:	Non-Government Organization
NIDCH	:	National Institute of Disease and Chest Hospital
NPTCCD	:	National Programme for Tuberculosis Control and Chest Diseases
NRHM	:	National Rural Health Mission
NSP	:	National Strategic Plan
NSS	:	New Sputum Smear
NTC	:	National Tuberculosis Centre
NTI	:	National Tuberculosis Institute
NTP	:	National Tuberculosis Programme
NTRL	:	National TB Reference laboratory
OR	:	Operational research
PAL	:	Practical Approach to Lung Health
PHCC	:	Primary Health Care Centre
PHCs	:	Primary Health Centers
PHIs	:	Public Health Inspectors
PHL	:	Public Health Laboratory
PHS	:	Public Health Services
PLHIV	:	People Living with HIV
PMDT	:	Programmatic Management of Drug-Resistant Tuberculosis
PMU	:	Programme Management Unit
PPD	:	Purified Protein Derivative
PPM	:	Public-private Mix

PPs	:	Private Practitioners
PTPs	:	Provincial TB Control Programs
PWB	:	patient-wise box
RNTCP	:	Revised National TB Control Programme
SAARC	:	South Asian Association for Regional Cooperation
SCC	:	Short Course Chemotherapy
SLD	:	Second Line Drug
SNRL	:	Supranational Reference Laboratory
SOPs	:	Standard Operating Procedures
SRL	:	Supra Reference Laboratory
SSF	:	Single Stream of Funding
STAC	:	SAARC TB and HIV/AIDS Centre
STLSs	:	Senior TB Laboratory Supervisors
TB	:	Tuberculosis
ToT	:	Training of Trainers
UHCs	:	Upazila Health Complexes
VCCT	:	Voluntary Counseling and Testing Centre
WHO	:	World Health Organization
XDR	:	Extensively Drug-Resistant Tuberculosis

Executive Summary

This is the twelfth Report on tuberculosis (TB) situation of SAARC Region which is being published by SAARC Tuberculosis and HIV/AIDS Centre (STAC) in a series that started in 2003. The main purpose of the report is to provide a comprehensive and up-to-date assessment of the TB epidemic and progress made in TB care and control at Global, SAARC Region and Member States level.

The incidence has been falling globally achieving the Millennium Development Goal target. Of estimated 9.0 million new cases of TB (126 per 100 000 population), 6.1 million cases were notified in 2013 of which 2.5 million were New Smear-Positive TB cases.

There were an estimated 11 million prevalent cases in 2013 (159 cases per 100 000 population) globally. An estimated 480 000 people developed MDR-TB and there were an approximately 210 000 deaths from MDR-TB. Among patients with pulmonary TB who were notified in 2013, an estimated 300 000 had MDR-TB.

A total of approximately 1.5 million people died of TB in 2013 and among them 1.1 million deaths were from TB among HIV-negative people and an additional 0.36 million deaths from TB among people who were HIV-positive.

The SAARC region, with an estimated incidence of 3.0 million TB cases, carries 34% of the global burden of TB out of which 1.79 million are estimated to be sputum smear positive infectious cases. Four of the eight Member Countries in the Region are among the 22 high burden countries (Afghanistan, Bangladesh, India and Pakistan) together notified 97.5% of the region. India alone accounted close to three fourth of all notifications in the SAARC region.

The case detection rate in the region is 58 % in the year 2013. And out of the sputum smear-positive pulmonary TB in the Region 89% was successfully treated among the 2012 cohort.

A total 81,142 estimated cases of MDR-TB among notified cases were notified in 2013 in the SAARC region, of which 41% were new pulmonary cases and 59% were previously treated cases.

As the large number of HIV infected persons are in the SAARC Region particularly in India, Bangladesh and Pakistan with high rates of TB transmission and the presence of high TB prevalence, the HIV epidemic could have significant implications on TB control in the Region. Collaborative TB/ HIV activities are critical in order to ensure that HIV positive TB patients are identified and treated and also to prevent active TB disease in latently infected HIV positive people. HIV testing for TB patients

is a critical entry point for both treatment and prevention. There was a significant progress in offering HIV testing for TB patients between 2002 and 2013 as health care providers initiated the “provider initiated HIV testing” for newly diagnosed TB patients.

All the SAARC Member States have developed their strategic plans for expansion of TB/HIV collaborative activities and are in the expansion mode. Some SAARC Member States have made significant progress in TB/HIV collaboration, while some are slow on this component.

All the Member States have initiated management of MDR-TB under the National TB Control Programme. While, all the SAARC Member States have initiated management of MDR-TB under the National TB Control Programme, one of the most important constraints to rapid expansion of diagnostic and treatment services for MDR-TB identified by all the SAARC Member States, is laboratory capacity. Constraints in availability and retention of adequately trained human resources, is one of the major concerns of all the SAARC Member States.

1. INTRODUCTION

1.1 Introduction of SAARC

The South Asian Association for Regional Cooperation (SAARC) established on 8th December 1985 comprises of Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. SAARC is a manifestation of the determination of the people of South Asia to work together towards finding solutions to their common problems in a spirit of friendship, trust and understanding and to create an order based on mutual respect, equity and shared benefits. The SAARC Secretariat is supported by different regional centers established in Member States to promote regional cooperation. Among them, SAARC TB and HIV/AIDS Centre are one of the regional centers which is located in Nepal.

1.2 SAARC TB and HIV/AIDS Centre (STAC)

1.2.1 Background

The Heads of State or Government of Member Countries of SAARC at their Fifth Summit held in Male on 22-23 November 1990 decided to establish SAARC Tuberculosis Centre in Nepal. The Centre was established in 1992 to work for control and prevention of Tuberculosis in the Region. Considering the role played by the centre through its activities on TB/HIV co-infection, the centre was renamed as SAARC Tuberculosis and HIV/AIDS Centre by the Thirty-first Session of Standing Committee of SAARC held in Dhaka on November 9-10, 2005 (during the Thirteen SAARC Summit) to work for prevention and control of TB and HIV/AIDS in the SAARC Region by coordinating the efforts of the National Tuberculosis Control Programme and National AIDS Control Programme of the Member States, with the following vision, mission, goal and objective.

1.2.2 Vision

SAARC TB and HIV/AIDS Centre be the leading institute to support and guide SAARC Member States to make the Region free of TB and HIV/AIDS.

1.2.3 Mission

The Mission of the SAARC TB and HIV/AIDS Centre is to support the efforts of National TB and HIV/AIDS Control Programmes through evidence based policy guidance, co-ordination and technical support.

1.2.4 Goal

The goal of the SAARC TB and HIV/AIDS Centre is to minimize the mortality and morbidity due to TB and HIV/AIDS in the Region and to minimize the transmission of both infections until TB and HIV/AIDS cease to be major public health problems in the SAARC Region.

1.2.5 Objective

To work for prevention and control of TB and HIV/AIDS in the SAARC Region by coordinating the efforts of the National TB and National HIV/AIDS Control Programmes of the SAARC Member States.

1.2.6 Role of STAC

One of the main functions of this centre is to collect, collate, analyze and disseminate relevant information in the field of TB and HIV/AIDS in the Region. In this regard, the Centre has been preparing and publishing SAARC Regional epidemiological reports annually on TB and HIV/AIDS for all the Member States and other stakeholders working in the field of TB and HIV/AIDS. Based on this information, progress in achieving Millennium Development Goals (MDGs) and other relevant global & local indicators in relation to TB and HIV/AIDS in the SAARC Member States can be monitored.

2. GLOBAL BURDEN OF TUBERCULOSIS

2.1 Basic facts about TB

TB is an infectious disease caused by the bacillus *Mycobacterium tuberculosis*. It typically affects the lungs (pulmonary TB) but can affect other sites as well (extra pulmonary TB). Overall, a relatively small proportion of people infected with *M. tuberculosis* will develop TB disease. However, the probability of developing TB is much higher among people infected with HIV. TB is also more common among men than women, and affects mainly adults in the most economically productive age groups.

The most common method for diagnosing TB worldwide is sputum smear microscopy (developed more than 100 years ago), in which bacteria are observed in sputum samples examined under a microscope. Following recent breakthroughs in TB diagnostics, the use of rapid molecular tests to diagnose TB and drug-resistant TB is increasing. In countries with more developed laboratory capacity, cases of TB are also diagnosed via culture methods which is the current reference standard.

Effective drug treatments were first developed in the 1940s. The most effective first-line anti-TB drug, rifampicin, became available in the 1960s. The currently recommended treatment for new cases of drug-susceptible TB is a six-month regimen of four first-line drugs: isoniazid, rifampicin, Ethambutol and Pyrazinamide. Treatment success rates of 85% or more for new cases are regularly reported to WHO by its Member States. Treatment for multidrug-resistant TB (MDR-TB), defined as resistance to isoniazid and rifampicin (the two most powerful anti-TB drugs) is longer, and requires more expensive and more toxic drugs. For most patients with MDR-TB, the current regimens recommended by WHO last 20 months, and treatment success rates are much lower.

For the first time in four decades, new TB drugs are starting to emerge from the pipeline, and combination regimens that include new compounds are being tested in clinical trials. There are several TB vaccines in Phase I or Phase II trials. For the time being, however, a vaccine that is effective in preventing TB in adults remains elusive.

Without treatment, TB mortality rates are high. In studies of the natural history of the disease among sputum smear-positive/HIV-negative cases of pulmonary TB, around 70% died within 10 years; among culture-positive (but smear-negative) cases, 20% died within 10 years.

2.2 The Stop TB Strategy at a glance

The Stop TB Strategy is the approach recommended by WHO to reduce the burden of TB in line with global targets set for 2015. The six major components of the strategy are: (i) pursue high-quality DOTS expansion and enhancement; (ii) address TB/HIV, MDR-TB, and the needs of poor and vulnerable populations; (iii) contribute to health-system strengthening based on primary health care; (iv) engage all care providers; (v) empower people with TB, and communities through partnership; and (vi) enable and promote research. The strategy is summarized below:

VISION	**A TB-Free World**
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 care for all people with TB. ❖ Reduce the human suffering and socioeconomic burden associated with TB. ❖ Protect vulnerable populations from TB, TB/HIV and drug resistant TB ❖ Support development of new tools and enable their timely and effective use ❖ Protect and promote human rights in TB prevention, care and control
TARGETS	❖ MDG 6, Target 6.c: Halt and begin to reverse the incidence of TB by 2015 ❖ Targets linked to the MDGs and endorsed by the Stop TB partnership - 2015: reduce prevalence and deaths due to TB by 50% compared with a baseline of 1990 - 2050: eliminate TB as a public health problem (defined as <1 case per 1 million population per year)

COMPONENTS OF STOP TB STRATEGY

1. Pursue high-quality DOTS expansion and enhancement

a) Secure political commitment, with adequate and sustained financing
b) Ensure early case detection, and diagnosis through quality-assured bacteriology
c) Provide standardized treatment with supervision, and patient support
d) Ensure effective drug supply and management
e) Monitor and evaluate performance and impact

2. Address TB/HIV, MDR-TB, and the needs of poor and vulnerable populations

a) Scale-up collaborative TB/HIV activities
b) Scale-up prevention and management of multi-drug-resistant TB (MDR-TB)
c) Address the needs of TB contacts and of poor and vulnerable populations

3. Contribute to health system strengthening based on primary health care

a. Help improve health policies, human resource development, financing, supplies, service delivery, and information
b. Strengthening infection control in health services, other congregate settings and households
c. Upgrade laboratory networks, and implement the Practical Approach to Lung Health
d. Adapt successful approaches from other fields and sectors, and foster action on the social determinants of health

4. Engage all care providers

a. Involve all public, voluntary, corporate and private providers through public-private Mix (PPM) approaches
b. Promote use of the International Standards for Tuberculosis Care

5. Empower people with TB, and communities through partnership

a. Pursue advocacy, communication and social mobilization
b. Foster community participation in TB care, prevention and health promotion
c. Promote use of the Patients' Charter for Tuberculosis Care

6. Enable and promote research

a. Conduct program-based operational research
b. Advocate for and participate in research to develop new diagnostics, drugs and vaccines

2.3 The post-2015 global TB strategy at a glance

VISION	A TB-Free World - Zero deaths, disease and suffering due to TB
GOAL	End the global tuberculosis epidemic.
MILESTONES FOR 2025	❖ 75% reduction in TB deaths (compared with 2015) ❖ 50% reduction in TB incidence rate (less than 55 TB cases per 100 000 population) ❖ No affected families facing catastrophic costs due to TB
TARGETS FOR 2035	❖ 95% reduction in TB deaths (compared with 2015) ❖ 90% reduction in TB incidence rate (less than 10 TB cases per 100 000 population) ❖ No affected families facing catastrophic costs due to TB

PRINCIPLES

1. Government stewardship and accountability, with monitoring and evaluation
2. Strong coalition with civil society organizations and communities
3. Protection and promotion of human rights, ethics and equity
4. Adaptation of the strategy and targets at country level, with global collaboration

PILLARS AND COMPONENTS

1. INTEGRATED, PATIENT-CENTRED CARE AND PREVENTION

A. Early diagnosis of TB including universal drug-susceptibility testing; and systematic screening of contacts and high-risk groups
B. Treatment of all people with TB including drug-resistant TB; and patient support
C. Collaborative TB/HIV activities and management of co-morbidities
D. Preventive treatment of persons at high risk; and vaccination against TB

2. BOLD POLICIES AND SUPPORTIVE SYSTEMS

A. Political commitment with adequate resources for TB care and prevention
B. Engagement of communities, civil society organizations, and public and private care providers
C. Universal health coverage policy, and regulatory frameworks for case notification, vital registration, quality and rational use of medicines, and infection control
D. Social protection, poverty alleviation and actions on other determinants of TB

3. INTENSIFIED RESEARCH AND INNOVATION

A. Discovery, development and rapid uptake of new tools, interventions and strategies

B. Research to optimize implementation and impact, and promote innovations

2.4 Global Epidemiology:

Tuberculosis (TB) remains one of the major public health problems, globally. In 2013, there were an estimated 9.0 million incident cases of TB and 1.5 million people died from the disease (1.1 million deaths among people who were HIV-negative and 360 000 among people who were HIV-positive). Among these deaths there were an estimated 210 000 from MDR-TB, a relatively high total compared with 480 000 incident cases of MDR-TB. An estimated 13% of new TB cases were HIV-positive in 2013.

The South-East Asia and Western Pacific Regions collectively accounted for 56% of the world's TB cases in 2013. The African Region had approximately one quarter of the world's cases, and the high rates of cases and deaths relative to population (280 incident cases per 100 000 on average, more than double the global average of 126). India and China had the largest number of cases (24% and 11% of the global total, respectively).

The MDG target of halting and reversing TB incidence by 2015 has already been achieved globally. The TB incidence rate fell at an average rate of 1.5% per year between 2000 and 2013. Globally by 2013, the TB mortality rate had fallen by 45% and the TB prevalence rate had fallen by 41% since 1990. To achieve the Stop TB Partnership targets of halving TB mortality and prevalence rates by 2015 compared with a baseline of 1990, an acceleration in the current rates of decline is required. Among the 22 high burden countries (HBCs) that account for over 80% of the world's TB cases, 10 appear on track to achieve all three global targets.

Between 2000 and 2013, TB diagnostic and treatment interventions saved an estimated 37 million lives. Although most TB cases and deaths occur among men, the burden of disease is also higher among women. In 2013, an estimated 510 000 women died from TB (330 000 among HIV – negative women and 180 000 among HIV-positive women). An estimated 80 000 HIV - negative children died from TB (estimates for HIV-positive children are not yet available).

2.4.1 Incidence of TB

In 2013, there were an estimated 9.0 million incident cases of TB (range, 8.6 million–9.4 million) globally, equivalent to 126 cases per 100 000 population. The absolute number of incident cases is falling slowly, at an average rate of 1.5% per year 2000−2013 and 0.6% between 2012 and 2013. Most of the estimated number of cases in 2013 occurred in Asia (56%) and the African Region (29%). Of the 9.0 million incident cases, an estimated 550 000 were children and 3.3 million (range, 3.2–3.5 million) occurred among women.

The six countries that stand out as having the largest number of incident cases in 2013 were India (2.0 million–2.3 million), China (0.9 million–1.1 million), Nigeria (340 000−880 000), Pakistan (370 000−650 000), Indonesia (410 000−520 000) and South Africa (410 000−520 000). India and China alone accounted for 24% and 11% of global cases, respectively.

The 9.0 million incident TB cases in 2013 included 1.0 million–1.2 million (11–14%) people living with HIV, with a best estimate of 1.1 million. Globally, MDR-TB accounted 480 000 (range, 350 000– 610 000) new cases in 2013 which included both the primary and acquired MDR-TB.

Globally, the incidence rate was relatively stable from 1990 up until around 2000, and then started to fall (Figure 02), achieving the MDG target ahead of the 2015 deadline. This downward trend needs to be sustained to ensure that the MDG target is met in 2015. The latest assessment for the 22 HBCs suggests that incidence rates are falling in most countries.

2.4.2 Prevalence of TB

There were an estimated 11 million prevalent cases (range, 10 million–13 million) of TB in 2013 equivalent to 159 cases per 100 000 population. By 2013, the prevalence rate had fallen 41% globally since 1990. Current forecasts suggest that the Stop TB Partnership target of halving TB prevalence by 2015 compared with a baseline of 1990 will not be met worldwide. Reaching the 50% reduction target by 2015 appears feasible in the South-East Asia Region.

2.4.3 TB Mortality

There were an estimated 1.5 million TB deaths in 2013, among them 1.1 million among HIV-negative people and 360 000 among HIV-positive people (TB deaths among HIV-positive people are classified as HIV deaths in ICD-10). These deaths included 510 000 women and 80 000 children. There were approximately 210 000 deaths from MDR-TB (range, 130 000–290 000).

Globally, the mortality rate (excluding deaths among HIV-positive people) has fallen by 45% between 1990 and 2013. The current rate of decline will need to accelerate to reach the Stop

TB Partnership target of a 50% reduction by 2015. Between 2000 and 2013, TB diagnostic and treatment interventions saved an estimated 37 million lives.

2.4.4 Drug-resistant TB

Globally, an estimated 3.5% (95% CI: 2.2–4.7%) of new cases and 20.5% (95%CI: 13.6–27.5%) of previously treated cases have MDR-TB. In 2013, there were an estimated 480 000 (range: 350 000−610 000) new cases of MDR-TB worldwide, and approximately 210 000 (range: 130 000–290 000) deaths from MDR-TB. Among patients with pulmonary TB who were notified in 2013, an estimated 300 000 (range: 230 000–380 000) had MDR-TB. More than half of these patients were in India, China and the Russian Federation. A total of 136 412 people with MDR-TB or rifampicin-resistant TB (RR-TB) who were eligible for MDR-TB treatment was notified globally in 2013, mostly by countries in the European Region, India and South Africa.

Overall, an increase in the number of notified cases of MDR-TB has been evident since 2009, and the increase between 2012 (when 110 000 cases were detected) and 2013 was particularly large, at 23%. The biggest increases between 2012 and 2013 were in India, Ukraine and Uzbekistan. Overall, only 48% of patients with MDR-TB were successfully treated, largely as a result of high mortality and loss to follow-up. Of 1 269 XDR-TB patients reported in 40 countries in the 2011 cohort overall, only 284 (22%) completed their treatment successfully and 438 (35%) patients died.

A new analysis of trends focusing on the years 2008−2013 shows that, at the global level, the proportion of new cases with MDR-TB remains unchanged. However, serious MDR-TB epidemics in some countries jeopardise progress.

2.4.5 Case Detection Rate

The best estimate of the CDR for all forms of TB globally in 2013 was 64% (range, 61–66%), up from 53–55% in 2005 and 38–41% in 1995 – the year in which the DOTS strategy began to be introduced and expanded. The highest CDRs in 2013 were estimated to be in the Region of the Americas (best estimate 77%; range, 73–80%), the Western Pacific Region (best estimate 83%; range, 79–88%) and the European Region (best estimate 80%; range, 77–84%). The other regions had estimated CDRs in the range of around 46–71%, with best estimates in the range 52−62%. The lowest estimated CDR in 2013 was in the African Region. The case detection rate was relatively high in 2013 in most of the HBCs in the South-East Asia and Western Pacific regions, as well as Brazil and the Russian Federation. It was lowest in Afghanistan, Bangladesh, the Democratic Republic of the Congo, Mozambique, Nigeria and Zimbabwe.

2.5 TB/HIV Co-infection

Globally, people living with HIV are 29 times more likely to develop TB disease than those who are HIV-negative. In 2013, an estimated 1.1 million (13%) of the 9.0 million people who developed TB worldwide were HIV-positive. The number of people dying from HIV-associated TB has been falling since 2004. However, globally there were still 360 000 deaths from HIV-associated TB in 2013, equivalent to 25% of all TB deaths (among HIV-negative and HIV-positive people) in 2013 and around 25% of the estimated 1.5 million deaths from HIV/AIDS.

Globally, 48% of notified TB patients had a documented HIV test result in 2013, and higher in the African Region (76%). Among the 41 countries with the highest TB/HIV burden, 16 achieved levels of ≥90%. Progress in increasing coverage of HIV testing among TB patients slowed between 2012 and 2013.

Coverage of co-trimoxazole preventive therapy (CPT) among HIV-positive TB patients remains high, and this increased slightly to 85% globally and 87% in the African Region in 2013. Between 2012 and 2013, there was an encouraging increase in the global coverage of antiretroviral therapy (ART) for notified TB patients who were known to be co-infected with HIV, from 60% to 70%. However, considerably more progress is needed to reach the target of 100%. Moreover, in 2013, the number of HIV-positive TB patients started on ART represented only 32% of the estimated number of HIV-positive people who developed TB in 2013.

Preventing TB deaths among people living with HIV requires intensified scale-up of TB prevention, diagnosis and treatment interventions and earlier initiation of ART among people living with HIV and those with HIV-associated TB. Further scale-up of collaborative TB/HIV activities could be facilitated by joint TB and HIV programming, which would help to overcome constraints, promote synergies and achieve efficiency gains, especially between TB and HIV programmes.

Table 01: Global Epidemiological Burden of TB (2013)

S. No.	Indicators	Estimated Number(rates)
1	Population	7.1 billion
2	Estimated Incidence	9.0 million (126 cases/100 000)
3	Estimated Prevalence	11 million (159 cases/100 000)
4	CDR of all forms of TB	64% (61 – 66 %)
5	Treatment Success Rate (2012 cohort)	86%
6	Cases Enrolled on MDR-TB Treatment	96617
7	Estimated Deaths Due to TB	1.5 million (13 cases/100 000)
8	HIV Positive in incident TB cases	1.1 million

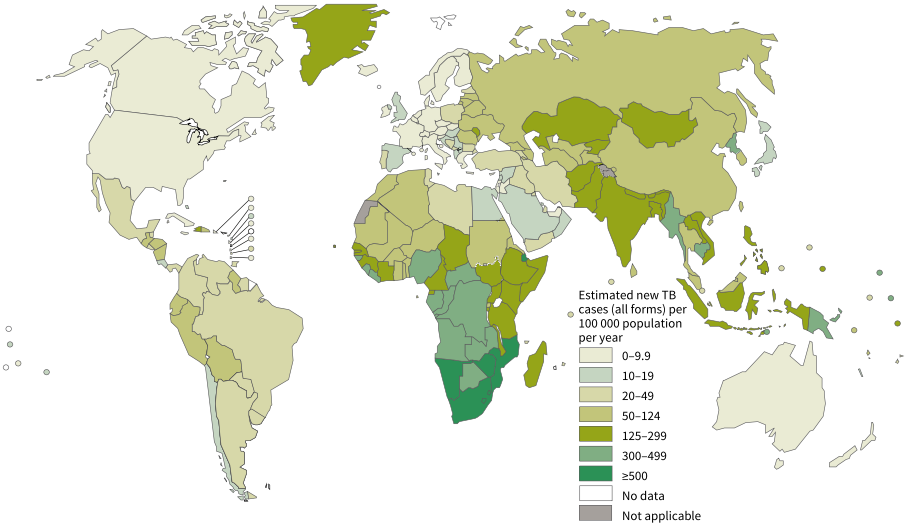
Source: Global TB Report WHO, 2014

Table 02: Global Estimated Incidence and Notified New Cases of TB, 2013

WHO REGIONS	ESTIMATED INCIDENCE ('000)	TOTAL NOTIFIED	NEW OR PREVIOUS TREATMENT HISTORY UNKNOWN			RELAPSE		NEW & RELAPSE	PERCENTAGE OF PULMONARY CASES BACTERIOLOGICALLY CONFIRMED
			PULMONARY BACTERIOLOGICALLY CONFIRMED	PULMONARY BACTERIOLOGICALLY CONFIRMED	EXTRA PULMONARY	PULMONARY BACTERIOLOGICALLY CONFIRMED	PULMONARY CLINICALLY DIAGNOSED		
Africa Region	2600	1414085	591519	457249	224742	45232	18093	1338203	57
Region of Americas	280	231330	129469	42365	33777	10004	2416	218875	76
Eastern Mediterranean Region	750	448597	173949	148748	99897	11251	112	434433	55
European Region	360	349745	116082	87583	41245	27162	27162	287015	59
South East Asia Region	3400	2297033	1054316	580374	333666	128256	1558	2098170	67
Western Pacific Region	1600	1375746	496303	700129	96838	46025	2440	1343057	44
Global	**9000**	**6116536**	**2561638**	**2016448**	**830165**	**267930**	**37345**	**5719753**	**58**

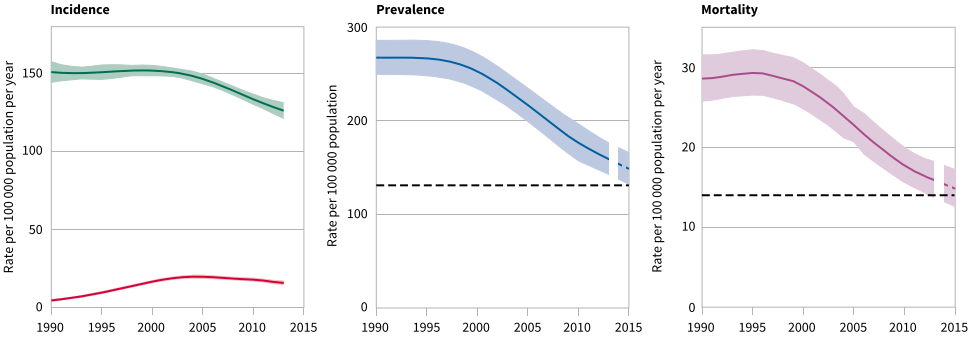
Source: Global TB Report WHO, 2014

Figure 01: Global Estimated TB Incidence Rates, 2013



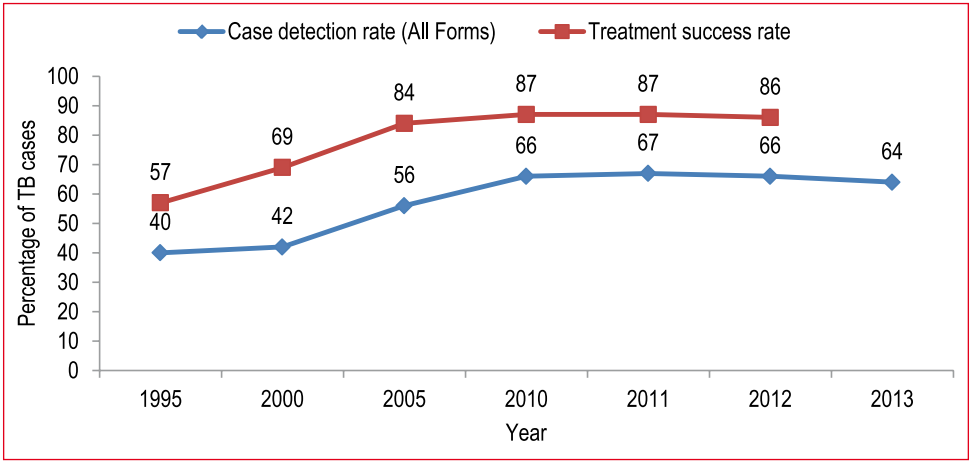
Source: Global TB Report WHO, 2014

Figure 02: Global trends in estimated rates of TB incidence, prevalence and mortality. *Left: Global trends in estimated incidence rate including HIV-positive TB (**green**) and estimated incidence rate of HIV-positive TB (**red**). Centre and right: Trends in estimated TB prevalence and mortality rates 1990-2013 and forecast TB prevalence and mortality rates 2014-2015. The horizontal dashed lines represent the stop TB Partnership targets of a 50% reduction in prevalence and mortality rates by 2015 compared with 1990. Shaded area represents uncertainty bands. Mortality excludes TB deaths among HIV-positive people.*



Source: Global TB Report WHO, 2014

Figure 03: Trend of Treatment Success and Case Detection rate (1995-2013)



Source: Global TB Report WHO, 2014

Figure 03 shows the trend of treatment success rate and case detection rate. Both the rates are in increasing trend from 1995 and remain steady from 2010. The case detection rate was 64 % in 2013 and treatment success was 86% in 2012.

3. BURDEN OF TUBERCULOSIS IN SAARC REGION

3.1 SAARC Regional Strategy for Control / Elimination of Tuberculosis

SAARC has adopted WHO's Global Stop TB Partnership strategy which envisions a TB-free world and elimination of TB by 2050.

3.1.1 Guiding Principles & SAARC TB Control Strategy

The strategic directions for TB Control are grounded in six principles, which will guide achievements of the strategic goals as follows:

Inclusiveness

Working in partnership with all stakeholders will be at the core of the TB Control Strategies in the SAARC Region. The stakeholders would include governments, private sector, non-governmental organization and civil society, researchers, academia, policy-makers, professional bodies, national and international development agencies.

Equitable access to effective interventions

The TB Control strategy would endeavor to ensure equity in access, availability and utilization of the quality TB Control services for all sections of the population including poor and marginalized, special populations such tribal, people living in slums, and distant and inaccessible rural areas and terrains.

Flexibility

All the SAARC Member States have their National Tuberculosis Programs and follow a general framework of DOTS and STOP TB partnership. However, each country may have specific and peculiar circumstances that would require adaptation of broad strategies to their own.

Quality

Commitment to high quality DOTS that would provide diagnostic services and treatment with effective anti-tubercular drugs will be an integral part of the strategy.

High Impact Interventions

High priority to research and innovation that have the greatest potential to improve and enhance performance and impact in reducing inequities, high cure rates, and contribute to achieving the Millennium Development Goals (MDGs) in the Region.

Ethics and Human Rights

Strategy would be based on the core values of equity, fairness and integrity, and promoting the utilization of scientific evidence and respect for gender and human rights.

3.1.2 Targets for SAARC Region

SAARC Region Targets for the scale-up of interventions for TB care and control set in line with the Global Plan to Stop TB 2011–2015

- By 2015: Reduce prevalence and death rates by 50%, compared with their levels in 1990
- By 2050: Reduce the global incidence of active TB cases to <1 case per 1 million population per year

3.2 Incidence of TB

In 2013, there were an estimated 3.0 million incident cases of TB, equivalent to 184 cases per 100 000 population. This carries 34% of the global burden of TB incidence. Four of the eight Member Countries in the Region are among the 22 high burden countries, with India accounting for 23 % of the world's TB cases. Among 3.0 million incident TB cases, 1.79 million are notified new and relapse cases.

Table 03: Estimates of the burden of diseases caused by TB in the SAARC Region, 2013

Country	Population ('000)	Incidence		Prevalence (Including HIV)		Mortality (Excluding HIV)	
		Number ('000)	Rate*	Number ('000)	Rate*	Number ('000)	Rate*
Afghanistan	30552	58	189	100	340	13	42
Bangladesh	156595	350	224	630	402	80	51
Bhutan[a]	733	1.1	181	1.5	225	0.1	14
India	1252140	2100	171	2600	211	240	19
Maldives	330	0.14	40	0.2	57	0.01	2
Nepal	27248	43	156	59	211	4.6	17
Pakistan	182143	500	275	620	342	100	56
Sri Lanka[a]	20416	13	66	22	109	0.22	1.1
Regional	**1670157**	**3065**	**184**	**4033**	**241**	**438**	**26**

*a Data & Report sent by Member States, NTP & Global TB Report WHO, 2014, * Rates are per 100 000 population*

3.3 Prevalence of TB

There was an estimated 4.0 million prevalent cases of TB in 2013 equivalent to 241 cases per 100 000 population. The incidence in the region ranged from 40 in Maldives to 275 in Pakistan per 1,00,000 population. Reaching the 50% reduction target by 2015 appears to be less feasible in the SAARC Region.

3.4 TB Mortality

There was an estimated 0.4 million TB deaths in 2013 equivalent to 26 cases per 100 000 population. The mortality rate ranged from 1.1 in Sri Lanka to 56 in Pakistan per 1,00,000 population. Reaching the 50% reduction target by 2015 appears feasible in the SAARC Region.

3.5 MDR – TB

The MDR TB cases in the region range from less than one to four percent among new TB cases and it ranges from less than one to almost 30 percent among the retreatment TB cases. In 2013 Pakistan has 4.3% of new tuberculosis cases with MDR-TB, which is highest in the SAARC region. However, in India there were 20,000 new MDR-TB cases among notified pulmonary TB cases. In case of retreatment Bangladesh has 29% of new tuberculosis cases with MDR-TB, which is highest in the SAARC region. However, in India there were 41,000 MDR-TB cases among retreatment TB cases (Table 04).

Table 04: Estimates of MDR-TB burden in the SAARC Region, 2013

Country	New		Retreatment	
	% of TB cases with MDR-TB	MDR-TB cases among notified TB cases	% of TB cases with MDR-TB	MDR-TB cases among notified TB cases
Afghanistan	3.7	820	20	460
Bangladesh	1.4	2100	29	2600
Bhutan	2.3	4	16	31
India	2.2	20000	15	41000
Maldives	2.2	2	16	0
Nepal	2.2	520	15	590
Pakistan	4.3	9900	19	3100
Sri Lanka	0.2	13	0.58	2
Regional		33359		47783

Source: Global TB Report WHO, 2014

3.6 Notification, Case Detections and Treatment Success

A total 1,791,866 cases were notified in 2013 in the SAARC region. The overall case detection rate in the region in 2013 for all types of TB cases was 58 % (53 to 83%) and treatment success rate of 89% (79 to 92%). (Table 05)

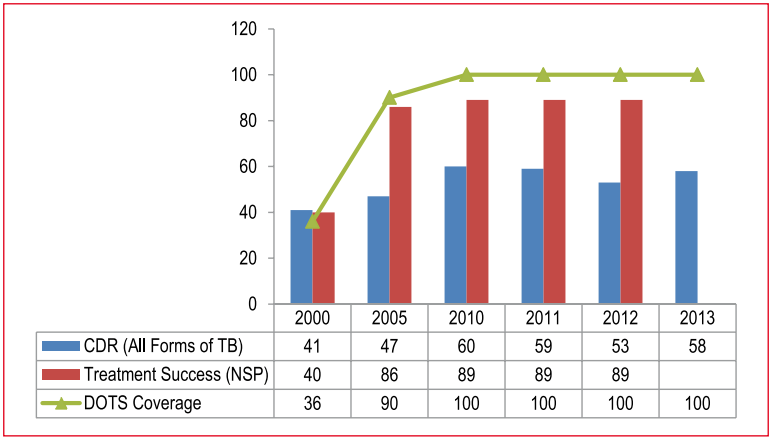
Table 05: Case detection (2013) and Treatment outcomes, New Smear - Positive cases (2012), SAARC Region

Country	Population ('000)	Incidence		Notified New and Relapse	Case Detection, All forms (%)	Treatment Success (%)
		Number ('000)	Rate*			
Afghanistan	30552	58	189	30507	53	88
Bangladesh	156595	350	224	184506	53	92
Bhutan[a]	733	1.1	181	1080	85	92
India	1252140	2100	171	1243905	58	88
Maldives	330	0.14	40	114	83	79
Nepal	27248	43	156	33834	78	91
Pakistan	182143	500	275	288910	58	91
Sri Lanka[a]	20416	13	66	9010	70	86
Total	**1670157**	**3065**	**184**	**1791866**	**58**	**89**

*a Data & Report sent by Member States, NTP & Global TB Report WHO, 2014, * Rates are per 100 000 population*

A remarkable progress has been made for DOTS since its inception in 1993 in the SAARC Region. By 1997 all Member States started DOTS strategy for TB control. DOTS coverage within the SAARC region has steadily increased since 2000. Population coverage in 1997 was 11%, since then it has increased and reached 99% in 2006 and since 2007 it is 100% (Figure 04).

Figure 04: Progress in TB Control in SAARC Region, (2000-2013)



	2000	2005	2010	2011	2012	2013
CDR (All Forms of TB)	41	47	60	59	53	58
Treatment Success (NSP)	40	86	89	89	89	
DOTS Coverage	36	90	100	100	100	100

Source: Global TB Report WHO, 2014 & SAARC Tuberculosis Updates

Regarding treatment success, the target was achieved in 2005. In 2013, case detection rate for all types of TB cases was 58%.

3.7 TB/HIV Co-infection

In 2013, almost 900 thousand TB patients with known HIV status has tested in which 44,165 (5%) tested TB patients are HIV-positive among them 95% and 88 % have started CPT and ART in the SAARC region.

In the SAARC region, India accounts for highest TB patients with known HIV status followed by Nepal and Pakistan. Around 95% of HIV-positive TB patients started CPT and 88% started ART in India at the end of 2013. However, Bangladesh, Bhutan and Nepal have 100 % HIV-positive TB patients enrolled in CPT and ART program. Only Afghanistan, Nepal and Sri-Lanka has the program to provide IPT to HIV-positive people and they are twelve, 665 and 09 respectively in numbers.

Table 07: HIV testing and provision of CPT, ART and IPT in the SAARC Region, 2013

Country	TB patients with known HIV status		HIV-positive TB patients		% HIV-positive TB patients started on		HIV-positive people provided with IPT
	No.	%	No.	%	CPT	ART	
Afghanistan	8247	26	9	< 1	-	-	12
Bangladesh	2067	1	68	3	90	100	-
Bhutan	1115	100	1	< 1	0	100	-
India	887903	63	44027	5	95	88	-
Maldives	10	9	0	0	-	-	-
Nepal	3773	11	65	2	-	100	665
Pakistan	8306	3	36	< 1	-	-	-
Sri Lanka	4650*	49	37	< 1	100	100	9
Regional	**899992**	**-**	**44165**	**5**	**95**	**88**	**-**

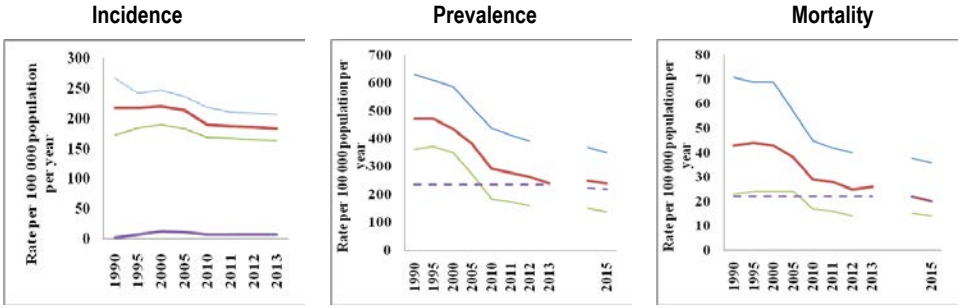
*Source: Global TB Report WHO, 2014, * Country Report-2014, Sri-lanka*

Table 08: Global vs. SAARC Region on TB Indicators, 2013

TB Control Indicators	Global	SAARC	% of Global
Estimated Population	7.1 billion	1.67 billion	23
Estimated Incidence	9.0 million (126 cases/100 000)	3.0 million (184cases/100 000)	33
Estimated Prevalence	11 million (159 cases/100 000)	4.0 million (241 cases/100 000)	36
New all types TB Cases notified	6.1 million	1.79 million	29
Case Detection Rate all forms of TB	64%	58%	-
Treatment Success Rate (2011 cohort)	86%	89%	-
Case Enrolled on MDR-TB Treatment	96617	--	--
Estimated Deaths Due to TB	1.5million (13 cases/100 000)	0.4 million (26 cases/100 000)	27
HIV Positive in incident TB cases	1.1 million	--	--

Source: Global TB Report WHO, 2014, Report sent by Member States

Figure 05: SAARC trends in estimated rates of TB incidence, prevalence and mortality. *Left: SAARC trends in estimated incidence rate including HIV-positive TB (**green**) and estimated incidence rate of HIV-positive TB (**red**). Centre and right: Trends in estimated TB prevalence and mortality rates 1990-2012 and forecast TB prevalence and mortality rates 2013-2015. The horizontal dashed lines represent the stop TB Partnership targets of a 50% reduction in the prevalence and mortality rates by 2015 compared with 1990. The shaded area represents uncertainty bands. Mortality excludes TB deaths among HIV-positive people.*



In the SAARC region, the incidence rate was relatively stable from 1990 up to around 2001, and then started to fall (Figure 05), achieving the MDG target ahead of the 2015 deadline. Between 2012 and 2013, the rate of decline was 2%.

There were an estimated 4.0 million prevalent cases of TB in 2013, equivalent to 241 cases per 100000 populations. By 2012, the prevalence rate had fallen 44% in the SAARC region since 1990. Current forecasts suggest that the Stop TB Partnership target of halving TB prevalence by 2015 compared with a baseline of 1990 will not meet in all the Member States, nevertheless it is feasible.

In the SAARC region, mortality rates (excluding deaths among HIV-positive people) have fallen by 42% since 1990, the current forecast suggests that the Stop TB Partnership target of a 50% reduction in TB mortality by 2015 compared with a baseline of 1990 will be achieved (Figure 05). Mortality rates are declining in all eight Member States.

4. PROGRESS ON TB CONTROL IN SAARC MEMBER STATES

Afghanistan

Bangladesh

Bhutan

India

Maldives

Nepal

Pakistan

Sri Lanka

AFGHANISTAN

Islamic Republic of Afghanistan is one of the eight countries of the SAARC Region. Afghanistan is a land-locked country, surrounded by Pakistan, Iran, Turkmenistan, Uzbekistan, Tajikistan and China. The land area is 652,225 square kilometers. In Afghanistan, the province is governed by a Governor. Afghanistan consists of 34 provinces and 364 districts. Population of Afghanistan was 31 million in 2013.

Introduction

The National Tuberculosis Control Program (NTP) was established in 1954 by Ministry of Public Health (MoPH)/Government of Islamic Republic of Afghanistan (GoIRA), with technical and financial supports of World Health Organization (WHO). In 1997 NTP, in collaboration with World Health Organization (WHO) and other TB partners, adopted the Directly Observed Treatment Short course (DOTS) strategy. But actual implementation of this strategy initiated only in 2002 when, the formation of a new Afghan government, Transitional Government of Afghanistan, came to power. TB control program services have been integrated into BPHS for primary health care and EPHS for secondary health care which were the priority public health services in this country. The TB services rapidly expanded after involvement of BPHS and EPHS implementers.

In early 2003, the first National Strategic Plan (NSP) for TB Control (2002-2005) was drafted and the global targets of 70% case detection of new sputum smear positive cases and 85% treatment success were adopted as the national goals. Second National Strategic Plan was developed in 2006 for next 5 years (2006-2010). In 2008 this plan was revised in line with Millennium Development Goals (MDGs) and Global Stop TB Partnership Strategy. The targets of this revised plan were for 5 years starting from 2009 onward. In 2012, NTP developed its fourth plan for the years 2013-2017.

The mission of the NTP is to reduce the impact of TB as a public health problem in the country. Since 2002, under the new Afghan government, the NTP has taken major blows to improve its managerial and technical capacity as well as in securing external technical assistance and resources in order to implement the DOTS strategy. Resultantly TB care and control services are delivered free of charge to the population as covered by the BPHS and EPHS.

The strategy of NTP for prevention of tuberculosis is early detection and treatment of all TB cases. TB sputum smear microscopy is the main tool for detection of infectious cases. NTP has been using the

8 months TB treatment regimen till 2012 and has planned gradually shifting to the 6 months regimen which will be implemented in all provinces after April 2013.

To achieve the strategic objectives, currently NTP has a network of health professional at central, and at provincial levels. The NTP staffs at different levels of the programs are responsible for proper implementation of TB control activities, based on the scope of their work across the country.

TB Epidemiology

WHO estimated approximately 58,000 all types of TB cases occurred in year 2013 with incidence of (189/ 100,000) population. The prevalence of TB is around 100,000 cases (340/ 100,000 pop per year) and mortality is 13,000 (42/ 100,000). Incidence of MDR-TB is estimated as 6.3% among both new and re-treated cases. The incidence of Multi-Drug Resistant (MDR) TB is derived from a sub national drug resistance survey conducted in six provinces of Afghanistan during 2010. As per WHO estimates around 820 new MDR-TB cases among notified pulmonary TB cases are present in the country by end of 2013.

Total number of diagnosed TB cases starting from 2001 till 2012 is 271953. Total 30507 cases were detected in 2013 (highest annual TB case notification so far in last decade). The progress is commendable because in 2001 only 9,581 cases were detected and from that point onwards, the trends shows increasing pattern except in 2008 and 2009 where a slight decline was seen in notified numbers as compared to previous year (2007). From 2010 onward, again the trends are upward. During 2012, 29578 all type of TB cases and 14277 of NNS+ TB cases have been notified. There have been variations in TB distribution by age and gender. There exists high incidence among people aged 15 to 44, with the highest incidence among the most productive age group of 25-34 years old. Among 30507 new and relapse cases 3454 (11%) cases aged under 15 years. However male female ratio is 0.7 in 2013.

Achievements

- Revision of National Strategic Plan for year s of 2014-2018.
- The first draft of NTP concept note for New finding Model was finalized.
- Proposal of anti TB drug & diagnostic kits has been approved by Japanese government (starting from 2015 up to 2017).
- Establishing Culture facilities in National Reference laboratory and 2 Reference laboratories.
- Construction of communicable Disease Hospital by support of Japanese government. (56 bed for Multi Drug Resistance patients).

- 31622 all forms of TB cases and 49 MDR cases has been notified and treated during 2013.
- TB Cross Border Coordination launched between Afghanistan and Pakistan.
- Conducted operational research on TB Gender, Accuracy of TB data.
- Shifting of 8 month treatment regimes to 6 months regimes.

Challenges

- Delay in approval and fund disbursement of Global fund R8 phase II
- Improvement of laboratory system including culture and DST
- Improvement of MDR program Management capacity at national and provincial level
- Program management in cross border areas
- Government budgetary support is very limited
- Sustainability of bilateral support is questionable
- TB care services for vulnerable groups are limited (childhood TB, prisons)

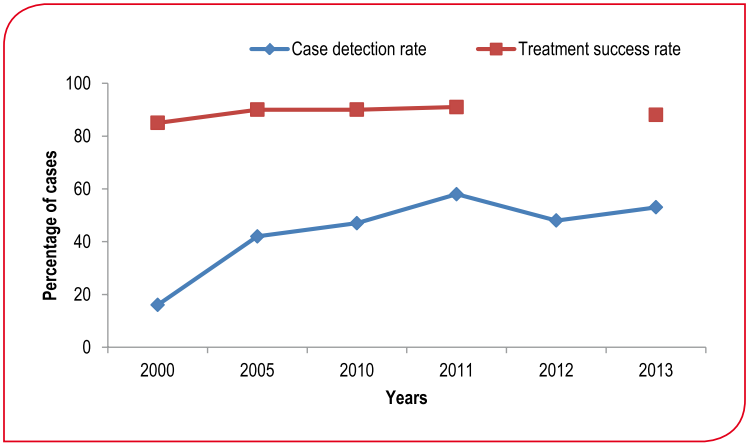
New Initiatives

- TB Screening among IDPs and prisoners by digital mobile x-ray
- Introducing of Gene Xpert for diagnosis of MDR – TB

Future Plans

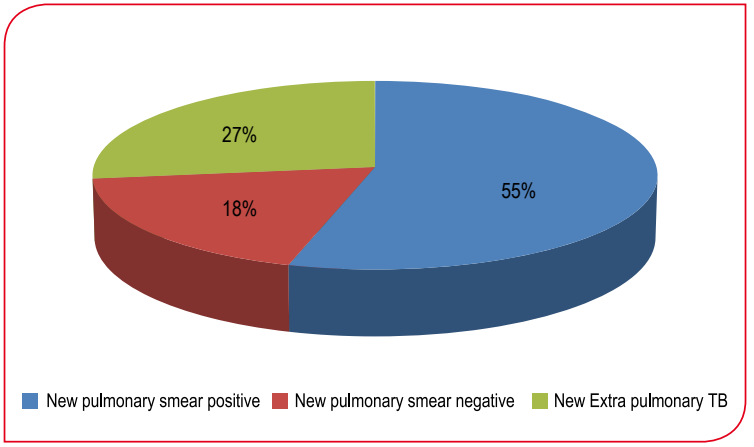
- NTP will submit the TB concept note for NFM through online platform by 15 June 2014.
- Revision of NTP, National Guideline as per WHO revised Guideline and new definitions.
- Conducting DST, drug susceptibility test as trial in National Reference Laboratory.
- TB screening of key affected population (IDPs, Prisoners, drug user, returnees …..etc) through active case finding and using new technologies (Digital mobile x-ray, Gene Xpert.
- Expansion of MDR program management in five big cities. (Jalalabab, Mazar, Hirat, Kandahar and Kunduz.
- Scale up and expansion of PPM activities in big cities.
- Strengthening drug and supply management & development of DMIS (drug management information system).
- Expansion of Stop TB Partnerships in main provinces including TB Patient Association
- DOTS expansion to entire health system (BHC, Sub Health Center, Health Post …etc

Case detection rate (all forms) and Treatment success rate for NSP cases (2000 – 2013)



Source: Global TB Report WHO, 2014

Percentage of Case notification by type of patient (2013)



Source: Global TB Report WHO, 2014

Epidemiology, 2012 - Afghanistan		Population 2013	31 million
Estimates of TB burden * 2013		**Number (thousands)**	**Rate (per 100 000 population)**
Mortality (excludes HIV+TB)		13 (8.4–16)	42 (27–53)
Mortality (HIV+TB only)		0.082 (0.065–0.1)	0.27 (0.21–0.33)
Prevalence (includes HIV+TB)		100 (54–170)	340 (178–554)
Incidence (includes HIV+TB)		58 (51–65)	189 (167–212)
Incidence (HIV+TB only)		0.2 (0.17–0.22)	0.64 (0.57–0.72)
Case detection, all forms (%)		53 (47–60)	
Estimates of MDR-TB burden * 2013		**New**	**Retreatment**
% of TB cases with MDR-TB		3.7(2.5–4.9)	20 (13–27)
MDR-TB cases among notified pulmonary TB cases		820 (560–1100)	460 (300–610)
TB case notifications 2013		**New ****	**Relapse**
Pulmonary, bacteriologically confirmed		14 277	1 154
Pulmonary, clinically diagnosed		8 020	
Extrapulmonary		7 056	
Total new and relapse		30 507	
Previously treated, excluding relapses		1115	
Total cases notified		31622	
Among 30 507 new and relapse cases: 3 454 (11%) cases aged under 15 years; male:female ratio: 0.7			
Reported cases of RR-/MDR-TB 2013	**New**	**Retreatment**	**Total ****
Cases tested for RR-/MDR-TB	7 (<1%)	38 (2%)	45
Laboratory-confirmed RR-/MDR-TB cases			73
Patients started on MDR-TB treatment			49
TB/HIV 2013		**Number**	**(%)**
TB patients with known HIV status		8 247	-26
HIV-positive TB patients		9	(<1)
HIV-positive TB patients on co-trimoxazole preventive therapy (CPT)			
HIV-positive TB patients on antiretroviral therapy (ART)			
HIV-positive people screened for TB			100
HIV-positive people provided with IPT			12
Treatment success rate			**(%)**
New cases registered in 2012			88
Previously treated cases registered in 2012			65
HIV-positive TB cases, all types, registered in 2012			
RR-/MDR-TB cases started on second-line treatment in 2011			29
XDR-TB cases started on second-line treatment in 2011			
Laboratories 2013			**%**
Smear (per 100 000 population)			2.2
Culture (per 5 million population)			0.5
Drug susceptibility testing (per 5 million population)			0
Sites performing Xpert MTB/RIF			1
Is second-line drug susceptibility testing available?			Yes, outside country

Source: Global TB Report WHO, 2014 Ranges represent uncertainty intervals, ** Includes cases with unknown previous TB treatment history*

BANGLADESH

People's Republic of Bangladesh is one of the Member States of the SAARC Region. It is a coastal country in South Asia. It shares the land borders with India and Myanmar and has an irregular coastline of Bay of Bengal to the south. It has six divisions and these divisions in turn are divided into 64 districts or Zila. The total area of the country is 147,570 km^2. Population of Bangladesh is 157 million and it is one of the most densely populated countries in the world.

Introduction

Tuberculosis (TB) is a major public health problem in Bangladesh since long. In 1965, tuberculosis services were mainly curative and based in TB clinics and TB hospitals. TB services were expanded to 124 upazila health complexes (UHCs) during the Second Health and Population Plan (1980-86), and were operationally integrated with leprosy during the Third Health and Population Plan (1986-91) under the Mycobacterial Disease Control (MBDC) unit of the Directorate General of Health Services (DGHS).

The revised NTP adopted the DOTS strategy during the Fourth Population and Health Plan (1992-98) under the project "Further Development of TB and Leprosy Control Services". The NTP started its field implementation in November 1993 in four thanas (upazilas) and progressively expanded to cover all upazilas by mid 1998. In July 1998, the NTP was integrated into the Communicable Disease Control component of the Essential Services Package under the Health and Population Sector Program (HNPSP) and NTP is recognized as a priority in HNPSP.

The Government of Bangladesh, together with its many and diverse partners from the public and private sectors, is committed to further intensify the DOTS program in order to sustain the achieved success and to reach the TB control targets linked to the Millennium Development Goals (MDGs).

TB Epidemiology

Tuberculosis is a major public health problem in Bangladesh and it ranks sixth among countries with the highest burdens of TB. WHO estimated approximately 350,000 all types of TB cases occurred in year 2013 with incidence of (224/ 100,000) population. The prevalence of TB is around 630,000 cases (402/ 100,000 pop per year) and mortality is 80,000 (51/ 100,000). Total 184506 notified new and relapse cases were detected, among the notified new and relapse cases 5051 (3%) cases aged

under 15 years. However male female ratio is 1.5 in 2013. Treatment success rate among new smear-positive cases is steadily 92% for the cohort of patients registered since 2006, including 2012 cohort. As per WHO estimates around 2100 new MDR-TB cases among notified pulmonary TB cases are present in the country by end of 2013.

The number of peripheral laboratories performing smear microscopy increased from 1050 in 2010 to 1070 in 2012, corresponding to 0.7 per 100 000 population, to extend greater access to TB diagnostic services. EQA has been carried out for all microscopy laboratories, showing an acceptable performance in 94% of them. Upgrading and renovation of the National Reference Laboratory at the National Institute of Diseases of the Chest and Hospital (NIDCH) in Dhaka was conducted in 2010. The National Reference Laboratory was accredited for culture and DST by the SRL in Antwerp, Belgium, in 2010, although the two have been linked since 2007. In 2012, the number of laboratories performing culture increased from one to three, all of which also perform DST for first-line drugs. Despite this increase, culture and DST capacity is still low considering the size of the population (at 0.1 laboratories per 5 million populations). Establishment of additional regional reference laboratories in Khulna and Sylhet divisions for culture and DST is in process and will be completed in 2014, although it was planned for 2013.

HIV prevalence in the adult general population is low (less than 1%) in Bangladesh except for injecting drug users, among which a recent survey revealed an HIV prevalence of 7%. This has raised concerns regarding the potential for transmission of HIV to other population groups. National TB/HIV operational guidelines were developed in 2009. While a national TB/HIV committee is now functional, collaboration between the national AIDS and sexually-transmitted infections programme and the NTP for TB/HIV activities needs to be strengthened. A limited number of NGOs provide HIV counseling, prevention and care for TB/ HIV coinfected individuals. Capacity-building for wider implementation of TB/HIV interventions started in 2009 and is ongoing. The number of TB patients tested in 2012 for HIV was 2086 (almost 10% more than in 2011), corresponding to 1% of all TB patients notified in the same year. HIV-positive TB cases detected numbered 63 (3% of all tested) and all of them started ART and CPT. TB screening was reported for 429 HIV-positive patients.

Achievements

- First national drug resistance survey completed and final report available soon.
- PMDT guidelines have been revised and updated.
- MDR-TB management successfully piloted in NIDCH at Dhaka and scaled up in Chittagong.
- The SOPs for community-based DR-TB finalized and piloted in four districts. Implementation is being supported by the partner (TB CARE II).

- Upgrading and renovation of the National Reference Laboratory at NIDCH, Dhaka was completed.
- Further expansion of PPM and involvement of workplaces (e.g. Bangladesh Garment Manufacturers and Exporters Association) was achieved.
- Drug storage capacity strengthened by the establishment of a separate store in the newly constructed hospital at Shyamoli, Dhaka.
- PAL guidelines finalized and two batches of ToT conducted in September 2012. Training conducted for two batches of medical doctors.
- National Guidelines for the Management of Tuberculosis in Children published and ToT conducted in 2012.
- National Guidelines for Tuberculosis Infection Control published.
- Training manuals for Gene Xpert developed and 12 Gene Xpert machines installed in different sites in 2012.
- Line probe assay and liquid culture installed and functionalized in 2012.
- Operational research on validation of data and TB/diabetes relationship conducted.

Challenges

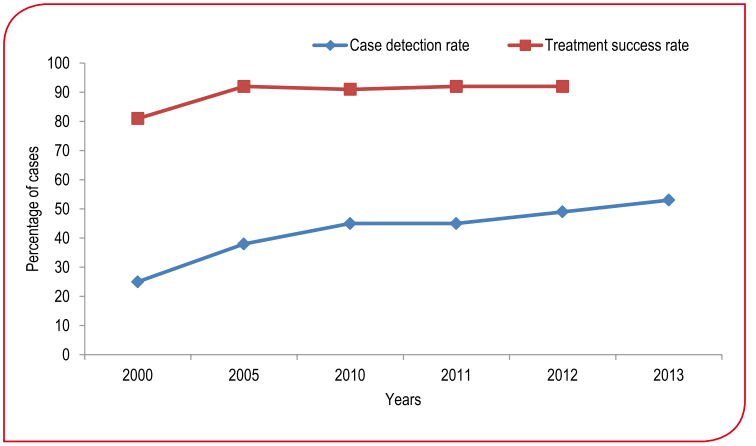
- Ensuring uninterrupted supply of drug and logistics;
- Scaling up the management of DR-TB and community PMDT;
- Further scaling up and strengthening private-public collaborative interventions;
- Strengthening linkages with the national AIDS and STI programme for TB–HIV;
- Quality control and sustaining the quality of DOTS ;
- Strengthening system for diagnosis of smear-negative, extra pulmonary and child TB cases.
- Reaching hard-to-reach population in islands and different marshy lands.

Future Plan

- Conducting a joint monitoring mission.
- Conducting TB prevalence survey in 2014–2015.
- Application to Global Fund using the new funding model.
- Piloting shorter regimen for MDR-TB management.
- Establishment of the regional reference laboratories at Khulna and Sylhet for culture and DST in a phase-wise manner.

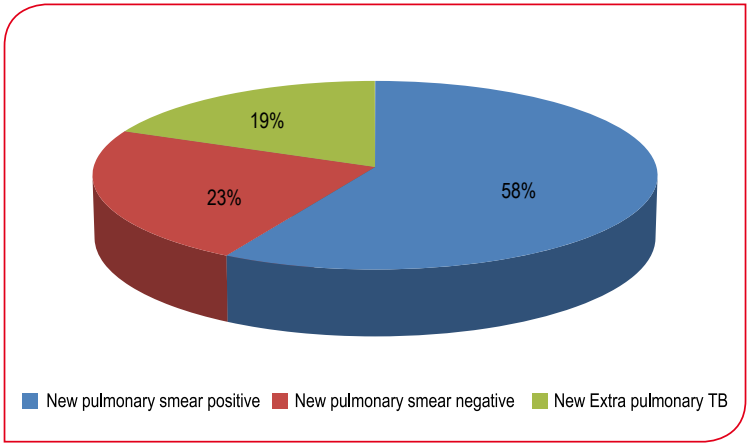
- Scaling up of PAL activity.
- Phase-wise expansion of TB–HIV collaborative activities
- Developing capacity for wider implementation of TB–HIV, MDR-TB and PPM DOTS interventions;
- Further expanding private-public collaborative activities.
- Strengthening the procurement and supply management system.
- Strengthening supervision and monitoring.
- Scaling-up of e-TB manager.
- Implementation of TB infection control.
- Scaling up of comprehensive ACSM activities.
- Conducting an assessment of the impact of the IEC campaigns on the population and service recipients.
- Capacity building for diagnosis and management of smear-negative, extra-pulmonary and childhood TB training for doctors and pediatricians for childhood TB to follow ToT.
- Establishing a pharmacovigilance system;
- Conducting drug quality assessment;
- Conducting operational research on validation of data, TB-diabetes relation etc
- Establishing logistics management information system.
- Scaling up of Gene X-pert sites.

Case detection rate (all forms) and Treatment success rate for NSP cases (2000 – 2013)



Source: Global TB Report WHO, 2014

Percentage of Case notification by type of patient (2013)



Source: Global TB Report WHO, 2014

Epidemiology, 2013 - Bangladesh		Population 2013	157 million
Estimates of TB burden * 2013		**Number (thousands)**	**Rate (per 100 000 population)**
Mortality (excludes HIV+TB)		80 (51–110)	51 (33–69)
Mortality (HIV+TB only)		0.16 (0.1–0.24)	0.1 (0.07–0.15)
Prevalence (includes HIV+TB)		630 (330–1 000)	402 (210–656)
Incidence (includes HIV+TB)		350 (310–400)	224 (199–253)
Incidence (HIV+TB only)		0.41 (0.18–0.46)	0.26 (0.12–0.3)
Case detection, all forms (%)		53 (47–59)	
Estimates of MDR-TB burden * 2013		**New**	**Retreatment**
% of TB cases with MDR-TB		1.4 (0.7–2.5)	29 (24–34)
MDR-TB cases among notified pulmonary TB cases		2 100 (1 000–3700)	2 600 (2 200–3 200)
TB case notifications 2013		**New ****	**Relapse**
Pulmonary, bacteriologically confirmed		105 539	2 869
Pulmonary, clinically diagnosed		42 394	0
Extrapulmonary		33 704	0
Total new and relapse		184 506	
Previously treated, excluding relapses		6 385	
Total cases notified		190 891	
Among 181 637 new cases: 5 051 (3%) cases aged under 15 years; male:female ratio: 1.5			
Reported cases of RR-/MDR-TB 2013	**New**	**Retreatment**	**Total ****
Cases tested for RR-/MDR-TB	446 (<1%)	4 611 (50%)	11 219
Laboratory-confirmed RR-/MDR-TB cases			1 024
Patients started on MDR-TB treatment			684
TB/HIV 2013		**Number**	**(%)**
TB patients with known HIV status		2 067	(1)
HIV-positive TB patients		68	(3)
HIV-positive TB patients on co-trimoxazole preventive therapy (CPT)		61	(90)
HIV-positive TB patients on antiretroviral therapy (ART)		68	(100)
HIV-positive people screened for TB		607	
HIV-positive people provided with IPT		0	
Treatment success rate			**(%)**
New cases registered in 2012			92
Previously treated cases registered in 2012			82
HIV-positive TB cases, all types, registered in 2012			81
RR-/MDR-TB cases started on second-line treatment in 2011			68
XDR-TB cases started on second-line treatment in 2011			100
Laboratories 2013			**%**
Smear (per 100 000 population)			0.7
Culture (per 5 million population)			<0.1
Drug susceptibility testing (per 5 million population)			<0.1
Sites performing Xpert MTB/RIF			26
Is second-line drug susceptibility testing available?		Yes, in and outside country	

Source: Global TB Report WHO, 2014 Ranges represent uncertainty intervals, ** Includes cases with unknown previous TB treatment history*

BHUTAN

Bhutan is a land locked country situated in the South Asia and is a Member State of the SAARC. Bhutan shares its borders with China and India. It has a land area of 38,394 square kilometers and the altitude varying from 180m to 7,550m above sea level. Bhutan is divided into 20 administrative districts. The total population of Bhutan was estimated to be 733,004 in the year 2013. Bhutan has a precious environment and a rich cultural heritage.

Introduction

The TB Control Programme is fully integrated into the general health services with the majority of activities decentralized to the districts. The NTP has introduced fixed-dose combination drugs (FDCs), and has procured them through Global Drug Facility (GDF) replacing single drug formulations for first-line treatment for both adult and pediatric cases. Guidelines on management of TB have been revised and trainings conducted for medical doctors involved in TB control activities. There is no representative data on levels of anti-TB drug resistance in the country.

The NTP has introduced fixed-dose combination drugs, replacing single drug formulations for first-line treatment for both adult and paediatric cases. The adult fixed-dose combination drugs are procured through the GDF while paediatric formulations are supported through a GDF grant. Guidelines on management of TB have been revised and trainings conducted for medical doctors involved in TB control activities.

TB Epidemiology

Bhutan had estimated TB prevalence and incidence rate of all forms of TB respectively of 225 and 1181 per 100 000 population. The treatment success for the cohort of new smear-positive cases registered during 2012 was 92%; success rate is steadily equal to or above 90% since 2007. The TB control programme is fully integrated into the general health services with the majority of activities decentralized to the districts.

There are no representative data on levels of DR-TB in the country. Based on modeling, WHO estimated that 2.2% of newly diagnosed TB cases and 16% of retreatment cases have MDR-TB. DRS started in 2010 and is ongoing to better assess levels of DR-TB in the country; preliminary results suggest a higher drug resistance rate than WHO estimates. In 2012, 15% of all new cases

notified and 6% of retreatment cases were tested for drug resistance; five MDR-TB cases were diagnosed among new cases tested for DST (proportion of 3%), none among retreatment cases, and six among cases with unknown history.

As result of laboratory capacity and PMDT strengthening efforts, in 2013 the programme was seeing an increased notification of MDR-TB cases. A drug resistance survey was completed in 2013 and the preliminary report, elaborated by the Public Health Laboratory, suggests high rates of MDR-TB, with around 5% among new cases and 35% among previously treated cases.

The prevalence of HIV infection in the general population is low, at 0.02%. HIV sentinel surveillance carried out annually has also revealed low levels of HIV infection among TB patients. Policies exist for referral of TB patients to HIV counseling and testing, CPT and ART are in place, as well as policy for IPT. Development of new TB/HIV guidelines, including a recording and reporting system to capture implementation of collaborative activities, was completed and training conducted for all involved health workers. A national body responsible for coordinating TB/HIV activities has been formed. TB/HIV collaborative activities are planned under the National Strategic Plan for TB Control 2012–2016. No HIV positive TB case was reported in 2012, however; following activities conducted in 2013, data are expected to be available for 2013 onwards.

Achievements

- TB TFM Grant secured for continuity of essential services;
- Procured quality assured FLDs and SLDs through GDF/GLC;
- Monitoring and supervision strengthened;
- Capacity of health workers built on TB & MDR-TB, TB-HIV;
- GDF/GLC Mission conducted;
- World TB Day observed;
- Lab. assessment visit by SNRL conducted;
- Sensitization and awareness programs to MSTF & community members including monastic institutions conducted
- Screened migrant workers at project and construction sites.

Challenges

- DOT implementation
- Gradual rise in number of MDR-TB cases;
- Delay in sample shipment and diagnosis of MDR-TB;

- Inadequate community participation;
- Ensuring adequate funding for TB control;
- Human resources in terms of technical capacity

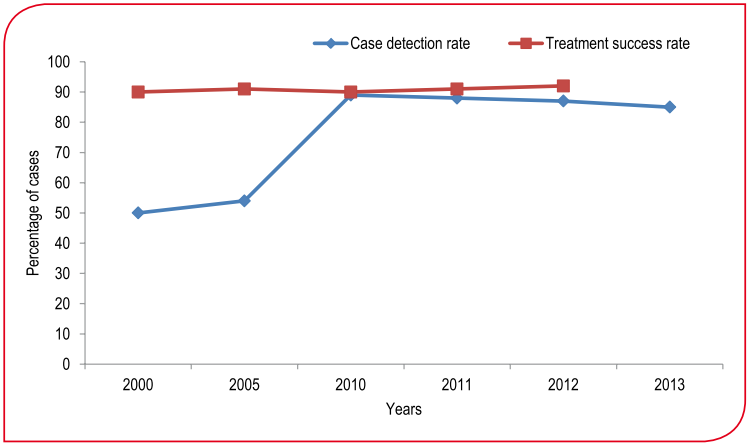
Future Plan

- Annual TB review meeting
- World TB Day observation
- External review of TB Program;
- Application to the NFM.
- Procurement of SLDs and FLDs
- Procurement of Lab. reagents and consumables
- Establishment of LPA at the PHL
- Sensitization of MSTF and community members on TB, TB-HIV
- Screening of migrant workers in Mega Hydro power and construction sites
- Monitoring and supervision visits to be conducted

New initiatives

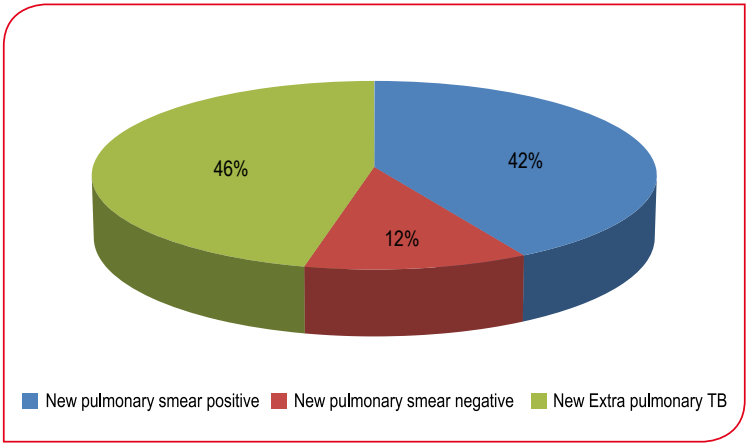
- Line Probe Assay Technology introduced at the PHL for rapid diagnosis of MDR-TB.

Case detection rate (all forms) and Treatment success rate for NSP cases (2000 – 2013)



Source: National Tuberculosis Programme, Bhutan, Data & Report,2013

Percentage of Case notification by type of patient (2013)



Source: National Tuberculosis Programme, Bhutan, Data & Report,2013

Epidemiology, 2013 - Bhutan		Population 2013	<1 million
Estimates of TB burden * 2013		**Number (thousands)**	**Rate (per 100 000 population)**
Mortality (excludes HIV+TB)		0.088 (0.052–0.18)	12 (6.9–23)
Mortality (HIV+TB only)		0 (–)	0 (–)
Prevalence (includes HIV+TB)		1.5 (0.5–3)	196 (67–393)
Incidence (includes HIV+TB)		1.3 (1.2–1.4)	169 (156–190)
Incidence (HIV+TB only)		<0.01 (<0.01–<0.01)	0.15 (0.14–0.17)
Case detection, all forms (%)		85 (76–92)	
Estimates of MDR-TB burden * 2013		**New**	**Retreatment**
% of TB cases with MDR-TB		2.2 (1.8–2.7)	35 (21–52)
MDR-TB cases among notified pulmonary TB cases		12 (10–15)	35 (20–51)
TB case notifications 2013		**New ****	**Relapse**
Pulmonary, bacteriologically confirmed		425	64
Pulmonary, clinically diagnosed		120	0
Extrapulmonary		471	0
Total new and relapse		1 080	
Previously treated, excluding relapses		35	
Total cases notified		1 115	
Among 1 071 new and relapse cases: 57 (5%) cases aged under 15 years; male:female ratio: 1.0			
Reported cases of RR-/MDR-TB 2013	**New**	**Retreatment**	**Total ****
Cases tested for RR-/MDR-TB	188 (44%)	29 (29%)	257
Laboratory-confirmed RR-/MDR-TB cases			65
Patients started on MDR-TB treatment			49
TB/HIV 2013		**Number**	**(%)**
TB patients with known HIV status		1 115	(100)
HIV-positive TB patients		1	(<1)
HIV-positive TB patients on co-trimoxazole preventive therapy (CPT)		0	0
HIV-positive TB patients on antiretroviral therapy (ART)		1	(100)
HIV-positive people screened for TB			
HIV-positive people provided with IPT			
Treatment success rate			**(%)**
New cases registered in 2012			92
Previously treated cases registered in 2012			35
HIV-positive TB cases, all types, registered in 2012			
RR-/MDR-TB cases started on second-line treatment in 2011			86
XDR-TB cases started on second-line treatment in 2011			
Laboratories 2013			**%**
Smear (per 100 000 population)			4.6
Culture (per 5 million population)			6.6
Drug susceptibility testing (per 5 million population)			6.6
Sites performing Xpert MTB/RIF			
Is second-line drug susceptibility testing available?		Yes, in and outside country	

Source: Global TB Report WHO, 2014 Ranges represent uncertainty intervals, ** Includes cases with unknown previous TB treatment history*

INDIA

Republic of India is an extremely large country with a population of almost 1252 million in SAARC Region. India is the second most populous country in the world accounting for 17.5% of the population of the world. The land area is 3,287,263 square kilometers. The country is surrounded by Bangladesh, Bhutan, China, Nepal, Pakistan and the Indian Ocean. The country is divided into 35 states and they in turn are divided into 640 districts. Health is administered in a decentralized manner at the level of the states and union territories.

Introduction

The Revised National TB Control Programme (RNTCP) is being implemented as a 100% centrally sponsored Scheme in the entire country, with DOTS strategy which is WHO recommended. Under the programme, diagnosis and treatment facilities including a supply of anti TB drugs are provided free of cost to all TB patients. The RNTCP laboratory network for sputum smear microscopy comprises a three-tier system of National Reference Laboratories (NRLs), Intermediate Reference Laboratories (IRLs) and Designated Microscopy Centres (DMCs) offering appropriate, affordable and accessible quality assured diagnostic services. To align with internationally recommended standards of diagnostic practices for TB, the programme supplies quality equipment and reagents to its nationwide network of laboratories. An inbuilt routine system has been designed for sputum microscopy, External Quality Assessment (EQA) and for supervision and monitoring of diagnostic systems by RNTCP Senior TB Laboratory Supervisors (STLSs) locally and by the Intermediate and National Reference Laboratories network at state and higher levels. The programme has a certification procedure for Culture and Drug Susceptibility Testing (C&DST) for solid and liquid, and Line Probe Assay (LPA) for molecular diagnosis with quality assurance protocol based on the WHO and Global Laboratory Initiative recommendations.

RNTCP has established a nationwide laboratory network of over 13,000 DMCs, which are supervised by the IRLs at the state level and the NRLs and Central TB Division at the national level. The RNTCP aims to consolidate its laboratory network and organize a defined hierarchy for conducting sputum microscopy with external quality assessment (EQA). Three microbiologists and four laboratory technicians have been provided by the RNTCP on a contractual basis to each NRL for supervision and monitoring of laboratory activities. The NRL microbiologist and laboratory supervisor/technician visit each assigned state at least once a year for 2-3 days as a part of onsite evaluation under the RNTCP EQA protocol.

The key focus of RNTCP combating the challenge of drug resistance is to prevent its emergence by providing quality DOTS diagnostic and treatment services, increasing the visibility and reach of the programme services and promoting adherence to International Standards of TB care and Standards of TB Care in India by all healthcare providers.

Revised National Tuberculosis Control Programme is a centrally sponsored scheme implemented through NRHM with the State, District & Municipal Corporation Health Societies having a separate sub-account for TB Control Activities through which the funds from the Ministry of Health and Family Welfare are disbursed for implementation of the project activities within the concerned State/ District/ Municipal Corporation. Financial Management is an integral and important component for RNTCP. The planning process focuses on financial analysis for programmatic and management use and meeting reporting obligations for all stakeholders and producing accurate and timely information that forms basis for better decisions, reducing delays and bottlenecks. This also deals with overall financial management deals with approval and review of annual plans and budgets.

TB Epidemiology

Though India is the second-most populous country in the world one fourth of the global incident TB cases occur in India annually. In 2013, out of the estimated global annual incidence of 9.0 million TB cases, 2.1 million were estimated to have occurred in India. Tuberculosis incidence per lakh population has reduced from 216 in year 1990 to 171 in 2013. Tuberculosis prevalence per lakh population has reduced from 465 in year 1990 to 211 in 2013. In absolute numbers, prevalence has reduced from 40 lakhs to 26 lakhs annually. Tuberculosis mortality per lakh population has reduced from 38 in year 1990 to 19 in 2013. In absolute numbers, morality due to TB has reduced from 3.3 lakhs to 2.4 lakhs annually.

India's TB control programme is on track as far as reduction in disease burden is concerned. There is 50% reduction in TB mortality rate by 2013 as compared to 1990 level. Similarly there is 55% reduction in TB prevalence rate by 2012 as compared to 1990 level.

India is one of the countries in the world with the highest burden of multidrug-resistant tuberculosis (MDR-TB). As per the WHO Global Report on Tuberculosis 2013, India accounts for 64,000 MDRTB cases out of 300,000 cases estimated globally to occur among the notified pulmonary TB cases annually. The key focus of RNTCP combating the challenge of drug resistance is to prevent its emergence by providing quality DOTS diagnostic and treatment services, increasing the visibility and reach of the programme services and promoting adherence to International Standards of TB care and Standards of TB Care in India by all healthcare providers.

The treatment outcome report is submitted 31-33 months after patients in the respective cohort are started treatment. Thus the latest annual cohort of MDRTB patients whose treatment outcomes were reported in 2013 is from July 2010 to June 2011. Of the 3530 MDRTB cases registered during this period, 48% were successfully treated, 22% died, 18% defaulted and 6% failed treatment.

Achievements

- India has introduced PMDT services in all 35 states on 24th March 2013. As on February 2014, PMDT services are available in all 35 states of the country across 704 districts covering the entire population (100%) of the country
- 110 DR TB wards established with airborne infection control measures by end of 2013.
- The country has shown an accelerated progress in scale up of PMDT diagnostic services as compared to the early implementation years from 2007 – 2012. A total of 51 C-DST labs were established using various technologies- 37 Solid culture labs, 12 Liquid culture labs and 41 LPA labs.
- 181021 MDR-TB suspects were tested for MDR-TB and 20763 patients were initiated on MDR-TB treatment during 2013.
- Focused and periodic intensive PMDT review meetings at regional levels with key state officials were conducted in 2013 with the objective to closely monitor the progress made by every state in their PMDT scale up plans and to further accelerate the scale up of PMDT services by addressing challenges through timely intervention.
- Programme is in the process of developing guidelines and regulation of newer anti-TB drugs in India. To look into possibility of introduction of Bedaquiline in India a protocol for multi-centric study is being finalized for four selected sites in the country.
- Additional Human Resources: Each DRTB Centre is provided with a counselor. Counseling of DRTB patients and their families is important for compliance to treatment, identification and management of adverse reaction to drugs and to ensure social security.

Challenges

- Ineffective and delayed diagnosis of TB in both the private and public sectors; patients accessing private providers not linked or engaged with RNTCP.
- Patients accessing private providers not linked or engaged with the RNTCP.
- Failure to notify and register patients diagnosed with TB in the private sector.

- Achieving universal access including marginalized and high-risk groups, while maintaining and continuing to improve the quality of services across the country.
- Introducing newer diagnostics for TB control and their positioning at various levels of health care.
- Ensuring adequate staffing at all levels, through improved HRD, to reduce reliance on a limited pool of TB-dedicated staff.
- Alleviating weaknesses in supervision capacity and quality, as well as in planning, monitoring and evaluation.
- Enforcement of regulations for prescribing and sale of anti-TB drugs; promoting rational use of first-line and second-line anti-TB drugs outside the programme to prevent MDR-TB and XDR-TB.
- Developing and implementing airborne infection control measures in health facilities.
- Effectively promoting operational research to address local challenges.

New Initiatives

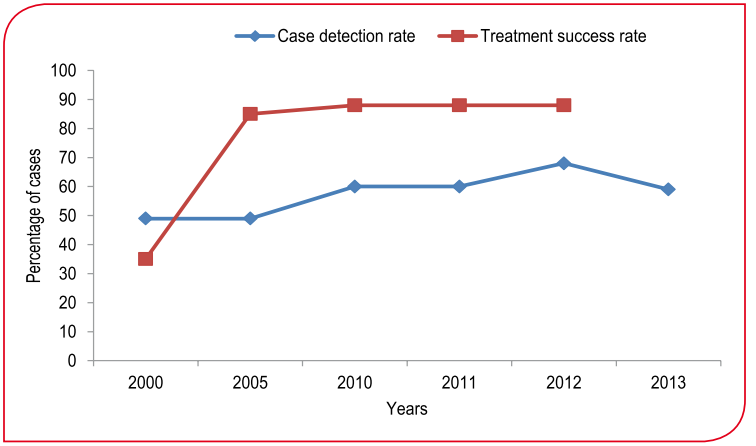
- RNTCP is conducting Systematic feasibility study introducing Genexpert in 18 Tuberculosis Units across the 12 states under programmatic conditions. The National Steering committee is monitoring the progress made for the study.
- According to the interim results of the study, RNTCP is currently using CB NAAT for the diagnosis of tuberculosis and Multi Drug Resistance Tuberculosis in high risk populations like HIV positive and pediatric groups.
- The RNTCP with the support from UNITAID, World Health Organization (WHO) and STOP TB Partnership initiated the RNTCP TB Xpert Project. The project currently provides services for rapid decentralized diagnosis of MDR-TB.
- Under the project, sites are also implementing innovative mechanism to adopt PPM models to provide diagnosis of TB and DR-TB from the private sector.

Future Plan

- RNTCP Bi-annual National Review meeting of STOs and Consultants was held from 9-11 January 2013 at New Delhi. All STOs were updated with changes in strategies and objectives under 12th Five Year Plan. Brainstorming group works were conducted to devise implementable micro-plans.

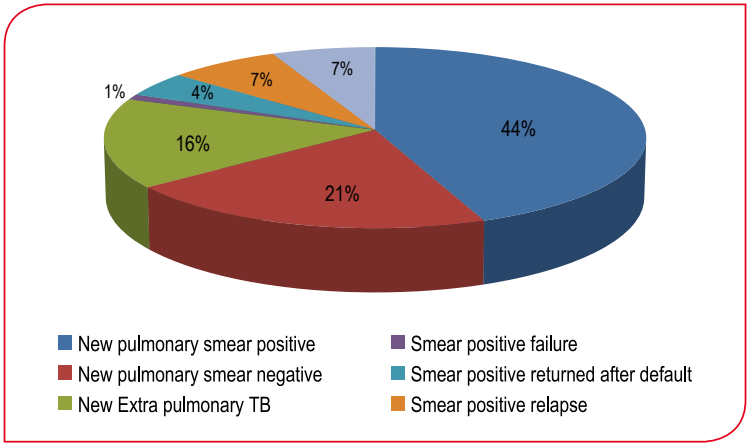
- Maintaining and further improving both quality and reach of services to move towards achieving universal access;
- Major initiatives for urban TB control models;
- Innovative private sector engagement initiatives including social franchising;
- Revisiting the laboratory scale-up plan to further expand the network of quality assured laboratories, strengthening capacity of the four national reference laboratories and the experienced state-level intermediate reference laboratories to undertake second-line DST, and establish two additional national reference laboratories;
- Deployment of 40 additional Xpert MTB/RIF machines to address laboratory capacity deficits in hard to reach areas for decentralized DST.
- Piloting of intensified TB case-finding in ART centres and piloting IPT.
- Disseminating the Standards for TB Care in India.
- Deploying revised schemes for involvement of NGOs and private practitioners across the country.
- Finalizing RNTCP guidelines for airborne infection control in health-care facilities and handing it over for integration with the general health system (the Indian public health standards, Medical Council of India, National Centre for Disease Control, National Rural Health Mission and Integrated Disease Surveillance Programme).

Case detection rate (all forms) and Treatment success rate for NSP cases (2000 – 2013)



Source: TB India, RNTCP, Annual Status Report, 2014

Percentage of Case notification by type of patient (2013)



Source: TB India, RNTCP, Annual Status Report, 2014

Epidemiology, 2013 - India		Population 2013	1 252 million
Estimates of TB burden * 2013		**Number (thousands)**	**Rate (per 100 000 population)**
Mortality (excludes HIV+TB)		240 (150–350)	19 (12–28)
Mortality (HIV+TB only)		38 (31–44)	3 (2.5–3.5)
Prevalence (includes HIV+TB)		2 600 (1 800–3 700)	211 (143–294)
Incidence (includes HIV+TB)		2 100 (2 000–2 300)	171 (162–184)
Incidence (HIV+TB only)		120 (100–140)	9.7 (8.3–11)
Case detection, all forms (%)		58 (54–61)	
Estimates of MDR-TB burden * 2013		**New**	**Retreatment**
% of TB cases with MDR-TB		2.2 (1.9–2.6)	15 (11–19)
MDR-TB cases among notified pulmonary TB cases		20 000 (17 000–24 000)	41 000 (30 000–52 000)
TB case notifications 2013		**New ****	**Relapse**
Pulmonary, bacteriologically confirmed		621 762	102 660
Pulmonary, clinically diagnosed		292 926	
Extrapulmonary		226 557	
Total new and relapse		1 243 905	
Previously treated, excluding relapses		171 712	
Total cases notified		1 415 617	
Among 1 243 905 new and relapse cases: 64 726 (5%) cases aged under 15 years;			
Reported cases of RR-/MDR-TB 2013	**New**	**Retreatment**	**Total ****
Cases tested for RR-/MDR-TB			248 341
Laboratory-confirmed RR-/MDR-TB cases			35 385
Patients started on MDR-TB treatment			20 763
TB/HIV 2013		**Number**	**(%)**
TB patients with known HIV status		887 903	(63)
HIV-positive TB patients		44 027	(5)
HIV-positive TB patients on co-trimoxazole preventive therapy (CPT)		41 827	(95)
HIV-positive TB patients on antiretroviral therapy (ART)		38 754	(88)
HIV-positive people screened for TB		1 063 644	
HIV-positive people provided with IPT			
Treatment success rate			**(%)**
New cases registered in 2012			88
Previously treated cases registered in 2012			74
HIV-positive TB cases, all types, registered in 2012			77
RR-/MDR-TB cases started on second-line treatment in 2011			50
XDR-TB cases started on second-line treatment in 2011			
Laboratories 2013			**%**
Smear (per 100 000 population)			1
Culture (per 5 million population)			0.2
Drug susceptibility testing (per 5 million population)			0.2
Sites performing Xpert MTB/RIF			54
Is second-line drug susceptibility testing available?			Yes, in country

Source: Global TB Report WHO, 2014 Ranges represent uncertainty intervals, ** Includes cases with unknown previous TB treatment history*

MALDIVES

Republic of Maldives is an island country formed by a number of natural atolls and a few islands in the Indian Ocean consisting of a double chain of twenty-six atolls, The islands are located southwest of the Indian subcontinent stretching 860 km north to south and 80 – 129 km east to west. For administrative purposes, the Country has been organized into seven provinces which consist of twenty one administrative divisions [20 administrative "atolls" and Male' city].

The population of Maldives was over 330,652 of which approximately one third of the population is living in the island of Male, the capital. The remaining two-thirds of the population are spread out over 198 islands. The economy of the Maldives depends mainly on tourism, fishing trade, shipping and construction. Resort islands, and modern hotels in Male are the main attractions for the increasing numbers of tourists.

Introduction

The NTP at the Health Protection Agency continues to act as a central body for registration, planning, monitoring and evaluation of TB control activities since its establishment in 1976. Continuous support has been received from WHO and from curative services in both the public and private sector for TB case-finding, treatment, record keeping, follow-up of TB patients and contact-tracing activities. All anti-TB drugs are available only through the Government-run NTP.

The main objectives of the NTP are to effectively improve and strengthen TB prevention activities, in addition to diagnosis and treatment of TB cases. In this regard, establishment of critical infrastructure and human resource development for intensified case-finding, early case detection and strengthening the microscopy network are critical. In 2012, there were 70 smear microscopy laboratories, representing a 30% increase compared to 2011; EQA has not been conducted for any laboratory. There is one culture facility in the country.

At present, priority has been given to improve and strengthen TB preventive activities, raise awareness, cure as many patients as possible and provide better services to the community. In this regard, efforts have been made to improve the quality of services in terms of case holding and case management. Work has been initiated to establish diagnostic facilities at regional and atoll levels. As a result of the intensified activities, the programme has maintained the same trend in TB prevalence for the past few years. In addition, the programme has made efforts to develop close coordination

and collaboration with other health establishments, especially private health-care institutions, in identifying and accurately reporting identified cases.

TB Epidemiology

Maldives had estimated TB prevalence and incidence rate of all forms of TB respectively of 57 and 40 per 100 000 population. Treatment success rate among new smear-positive cases was 83% for the cohort of patients registered in 2012. Treatment success rate is below the 85% target since 2007, mainly because of defaulters and non-evaluated cases; however, for the cohort of 2012 the success rate is mainly affected by the proportion of patients who died.

Drug susceptibility testing, if deemed clinically necessary for a particular patient, is undertaken by shipment of samples to the National Tuberculosis Institute (NTI), Bangalore, India, which is also the designated supranational reference laboratory for the country. Patients diagnosed with MDR-TB are managed clinically at the tertiary-care hospital, the Indira Gandhi Memorial Hospital (IGMH) in Malé, and treatment is based on individualized regimens. Second-line drugs for the management of these cases are procured by the Ministry of Health and Family on a case-by-case basis.

Available data suggest that TB is relatively uncommon in Maldives; HIV prevalence is estimated to be less than 0.1% in the adult population and TB/ HIV is not a major problem yet. Screening of all HIV-positive cases for active TB is in place in collaboration with the HIV programme since 2003. HIV testing for all TB patients above 15 years of age was initiated in December 2011. In 2012, only one TB patient was tested positive for HIV; no CPT or ART was initiated.

Achievements

- The Government of Maldives is committed to support the programme.
- Most activities for the programme, including drug purchase, are undertaken through state funding with limited external support through WHO.
- Availability of quality-assured anti-TB drugs from the Facility is being maintained.
- Continuous allocation of funds by the Government for the procurement of anti-TB drugs.
- Direct observation for full course of treatment is in place due to the well functioning DOT centres at all health facilities.
- For the past decade, the number of notified cases has been steadily decreasing

- Screening of all HIV-positive cases for active TB since 2003, in collaboration with the HIV programme.

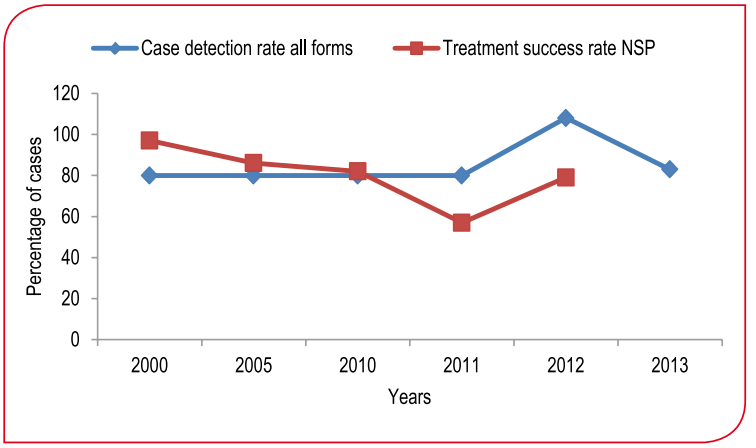
Challenges

- Lack of human and financial capacity to implement, fully control and coordinate all TB-related activities in the country.
- EQA has not been carried out for smear microscopy.
- No capacity available for DST: no adequate system of sputum transport has been established with external TB laboratory for DST (for diagnoses as well as for follow-up for MDR-TB and XDR-TB patients).
- Inadequate levels of collaboration between all care providers and the NTP.

Future Plan

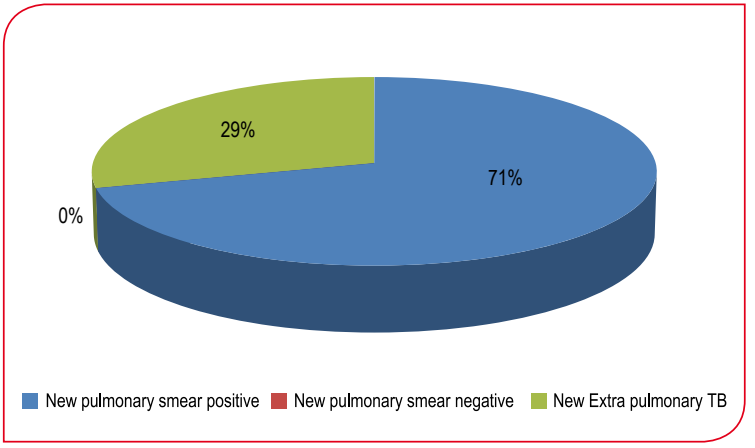
- Finalization and endorsement of the national strategic plan for TB control 2014–2018.
- Apply for the Global Fund new funding mechanism grant for 2015.
- Review and revise the national guidelines for PMDT and national guidelines for TB control.
- Development of treatment guidelines, SOPs and protocols for TB screening in special institutions.
- Strengthen TB surveillance and monitoring.
- Promotional activities to mark World TB Day 2014.

Case detection rate (all forms) and Treatment success rate for NSP cases (2000 – 2013)



Source: Global TB Report WHO, 2014

Percentage of Case notification by type of patient (2013)



Source: Global TB Report WHO, 2014

Epidemiological, 2013 Maldives		Population 2013	<1 million
Estimates of TB burden * 2013		**Number (thousands)**	**Rate (per 100 000 population)**
Mortality (excludes HIV+TB)		<0.01 (<0.01–<0.01)	2.2 (1.8–2.6)
Mortality (HIV+TB only)		0 (–)	0 (–)
Prevalence (includes HIV+TB)		0.2 (0.094–0.34)	57 (27–97)
Incidence (includes HIV+TB)		0.14 (0.12–0.15)	40 (34–44)
Incidence (HIV+TB only)		<0.01 (<0.01–<0.01)	0.07 (0.03–0.08)
Case detection, all forms (%)		83 (75–97)	
Estimates of MDR-TB burden * 2013		**New**	**Retreatment**
% of TB cases with MDR-TB		2.2 (1.8–2.7)	16 (12–20)
MDR-TB cases among notified pulmonary TB cases		2 (1–2)	0 (0–0)
TB case notifications 2013		**New ****	**Relapse**
Pulmonary, bacteriologically confirmed		80	1
Pulmonary, clinically diagnosed		0	0
Extrapulmonary		33	0
Total new and relapse		114	
Previously treated, excluding relapses		0	
Total cases notified		114	
Among 114 new and relapse cases: 10 (9%) cases aged under 15 years; male:female ratio: 1.7			
Reported cases of RR-/MDR-TB 2013	**New**	**Retreatment**	**Total ****
Cases tested for RR-/MDR-TB	5 (6%)	1 (100%)	6
Laboratory-confirmed RR-/MDR-TB cases			0
Patients started on MDR-TB treatment			0
TB/HIV 2013		**Number**	**(%)**
TB patients with known HIV status		10	(9)
HIV-positive TB patients		0	0
HIV-positive TB patients on co-trimoxazole preventive therapy (CPT)		0	
HIV-positive TB patients on antiretroviral therapy (ART)		0	
HIV-positive people screened for TB		5	
HIV-positive people provided with IPT		0	
Treatment success rate			**(%)**
New cases registered in 2012			79
Previously treated cases registered in 2012			100
HIV-positive TB cases, all types, registered in 2012			0
RR-/MDR-TB cases started on second-line treatment in 2011			25
XDR-TB cases started on second-line treatment in 2011			
Laboratories 2013			**%**
Smear (per 100 000 population)			20.3
Culture (per 5 million population)			14.5
Drug susceptibility testing (per 5 million population)			0
Sites performing Xpert MTB/RIF			0
Is second-line drug susceptibility testing available?			Yes, outside country

Source: Global TB Report WHO, 2014 Ranges represent uncertainty intervals, ** Includes cases with unknown previous TB treatment history*

NEPAL

Nepal is a landlocked country and is located in the Himalayas and bordered to the north by the China and to the south, east, and west by the India. It is comprised of 75 districts divided into five regions (Far- Western, Mid-Western, Western, Central and Eastern). It has an area of 147,181 square kilometers and a population of approximately 27 million. The urban population is largely concentrated in the Kathmandu valley. Nepal has a market economy largely based on agriculture and tourism.

Introduction

The National Tuberculosis Programme (NTP) is fully integrated within the general primary health services. NTP vision, goal, policies and strategy are in line with WHO and international recommendations.

National Tuberculosis Centre (NTC) is the focal point of the NTP. It is responsible for establishment of programme policies, strategy and planning. In addition, NTC also carries out the functions of national referral clinic. Central laboratory at the NTC is the focal point for NTP laboratory network, which is responsible for policy and guideline development, training, quality control and supervision. Technical support, monitoring and evaluation, training, supervision, logistics, health education, communication, and research are key functions of NTC. Nepal has a long and successful history of TB control.

NTC has established of Programme Management Unit (PMU) at the central level for over all management of the Global Fund grants. This PMU is an overall Coordination, Finance, Monitoring & evaluation, Sub Recipient Management, Training, Procurement and technical sections for Private Public Partnership, MDR TB Management and Advocacy Communication & Social Mobilization.

At the Regional level, NTP activities are planned and carried out with coordination and cooperation of the Regional Health Directorate. At the District level, the District Health Office/ District Public Health Office are responsible for planning and implementation of NTP activities within the district.

TB Epidemiology

World Health Organization estimates prevalence of all types of tuberculosis cases for Nepal at 59,000 (211/100K) while the number of all forms of incidence cases is estimated around 43,000 (156/100K). With the introduction of Directly Observed Treatment Short course (DOTS) number of deaths has

dramatically reduced from 9,712 (51/100k) in 1990 to (17/100k) in 2013. Treatment success rate among new smear-positive cases was 91% for the cohort of patients registered in 2012, and has been consistently above the target of 85% since 2001. The success rate among new smear-negative/extra pulmonary and retreatment cases is high: 91% and 85%, respectively, in the 2012 cohort.

Like many developing countries tuberculosis mostly affects the young age group of the population (15-54 year). However, age distribution trend among new smear positive cases during recent couple of years shows a small but steady shift to older age group of patients. This evidence suggests beginning of the effects of good TB control and slowing of disease transmission in the community over recent years.

By mid July 2013 a total of 4,258 health institutions including 1,184 Treatment Centers and 3,074 Sub-Treatment Centers were offering DOTS for provision of DOTS based TB control services. Beside government health institutions several NTP partners also provide DOTS including; private nursing homes, polyclinics, factories, I/NGOs health clinics, eye hospitals, prisons, refugee camps, police hospitals, medical colleges, municipalities, Village Development Committees and District Development Committees.

During this reporting year NTP registered 35,438 TB cases; among these 17,788 (50.20%) were sputum smear positive (all forms: new smear positive, relapse, failure and return after default). Among the cohort of all the TB cases registered during this latest year 15,099 (42.60%) were new smear positive TB cases. Similarly 6,689 (7.58%) were smear positive retreatment TB cases, 8,367 (23.61%) were sputum smear negative, 8,140 (22.96%) were extra-pulmonary TB cases and 1,143 (3.22%) were other cases.

Achievement

- Full implementation of all six components of the Stop TB Strategy.
- Successful implementation and nationwide coverage of MDR/XDR-TB management programme. At present, 41 of the 75 districts are covered by DR-TB centres and sub-centres.
- Full DOTS health institutional coverage in the primary health system including 100% coverage in primary health care centres and health posts, and 99% of sub-health posts in the country.
- Successful resource mobilization through the Global Fund (Rounds 4 and 7 and national strategy application grant), LHL International and WHO/Stop TB Partnership.

- Revision of national DR-TB management manual.
- Revision of NTP general manual (with introduction of childhood TB management section).
- Establishment of PAL in 19 districts in the country.
- Development of infection control policy, strategy, plan and guidelines and resource mobilization for implementation.
- Establishment of hostels for DR-TB cases.
- Uninterrupted supply of first- and second-line and pediatric quality-assured TB medicines through the GDF.
- Development of an ambitious PMDT expansion plan for 2012/2013– 2015/2016
- Extension of national strategy application grant to Phase 2 (16 July 2013–15 July 2015, US$ 23 million budget).
- Introduction of Xpert MTB/RIF technology in several districts and development of national algorithms for their use.
- Piloting of IPT in five HIV centres.
- SAARC Regional Expert Group Meeting of TB Programme Managers to finalize the Regional Strategy for Elimination/Control of TB – 2012.

Challenge

- Programme sustainability at risk due to heavy dependence on external funding and one major donor (the Global Fund).
- Addressing operational issues of accommodation and insufficient socioeconomic support for MDR-TB cases.
- Expansion of DOTS in urban areas.
- Introducing infection control in TB programme setting.
- Addressing stagnant case notification by implementing intensified case detection among at-risk and unreached populations.
- Implementation of proper and effective TB/HIV collaborative activities, including provider-initiated HIV testing and counseling and the “Three I’s” for TB/HIV (intensified case-finding, IPT, and infection control).
- Harnessing the potential offered by a rampant, yet barely regulated, private health sector through the adoption and expansion of PPM’s most suitable model(s).

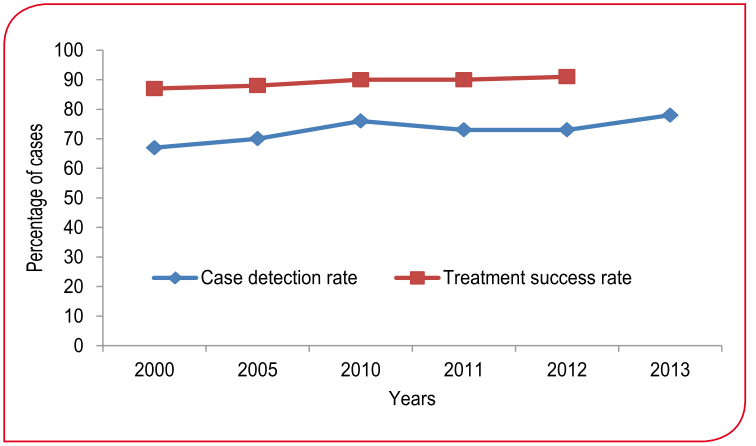
Initiative

- X-pert machine in use
- Child TB focus intervention
- Contact tracing initiative
- Provision of TB HIV collaborative services at selected sites through close partnership with National AIDS Programme.
- Collaboration with both public and private sector partners.
- Close co-ordination and co-operation with NGOs/INGOs and external development partners

Future Plan

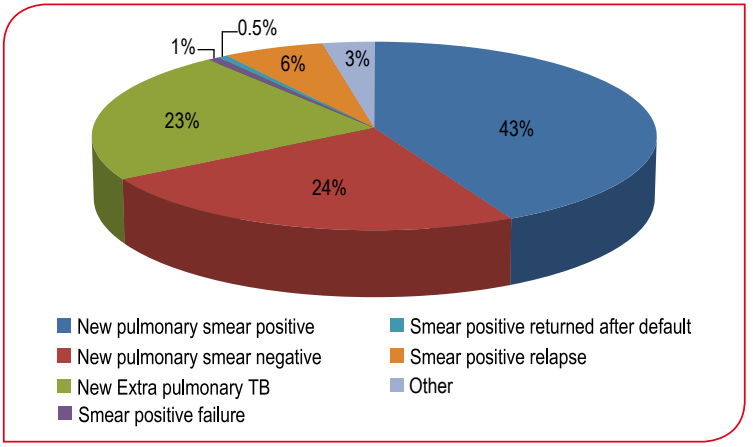
- Planning and initiation of prevalence survey.
- Expansion of DOTS in urban areas.
- Starting other forms of intensified case-finding.
- Introduction of infection control in TB programme settings.
- Increasing case detection of MDR-TB, TB/HIV and sputum smear-negative cases by strategically deploying the Xpert MTB/RIF machines and cartridges granted by WHO plus others to be procured under the national strategy application grant.
- Expansion of PAL initiative to all health facilities in the 19 districts.
- Expansion and consolidation of TB/HIV collaborative activities.
- Developing the NTP national strategic plan 2015–2019.
- Submitting the concept note for the Global Fund new funding mechanism.
- Conducting a national TB conference.
- Countrywide adoption of the revised recording and reporting formats.
- Establishment of five additional DR-TB hostels inside governmental health institutions.
- Upgrading of three regional laboratories (two for sputum culture, one for culture and DST).
- Procurement and deployment of six more Xpert MTB/RIF machines under the national strategy application grant Phase 2.
- Engaging in more aggressive PPM activities.

Case detection rate (all forms) and Treatment success rate for NSP cases (2000 – 2013)



Source: Annual report NTC, Nepal (2012/13)

Percentage of Case notification by type of patient (2013)



Source: Annual report NTC, Nepal (2012/13)

Epidemiological, 2013 - Nepal		Population 2013	27 million
Estimates of TB burden * 2013		**Number (thousands)**	**Rate (per 100 000 population)**
Mortality (excludes HIV+TB)		4.6 (2.1–7.5)	17 (7.4–27)
Mortality (HIV+TB only)		0.32 (0.17–0.51)	1.2 (0.62–1.8)
Prevalence (includes HIV+TB)		59 (27–100)	211 (99–365)
Incidence (includes HIV+TB)		43 (39–49)	156 (139–178)
Incidence (HIV+TB only)		1.6 (0.66–1.8)	5.6 (2.4–6.4)
Case detection, all forms (%)		78 (68–87)	
Estimates of MDR-TB burden * 2013		**New**	**Retreatment**
% of TB cases with MDR-TB		2.2 (1.3–3.8)	15 (10–23)
MDR-TB cases among notified pulmonary TB cases		520 (310–890)	590(390–870)
TB case notifications 2013		**New ****	**Relapse**
Pulmonary, bacteriologically confirmed		15 099	2 228
Pulmonary, clinically diagnosed		8 367	0
Extrapulmonary		8 140	0
Total new and relapse		33 834	
Previously treated, excluding relapses		1 604	
Total cases notified		35 438	
Among 114 new and relapse cases: 10 (9%) cases aged under 15 years; male:female ratio: 1.7			
Reported cases of RR-/MDR-TB 2013	**New**	**Retreatment**	**Total ****
Cases tested for RR-/MDR-TB	1 948 (13%)	953 (25%)	2 902
Laboratory-confirmed RR-/MDR-TB cases			477
Patients started on MDR-TB treatment			388
TB/HIV 2013		**Number**	**(%)**
TB patients with known HIV status		3 773	(11)
HIV-positive TB patients		65	(2)
HIV-positive TB patients on co-trimoxazole preventive therapy (CPT)			
HIV-positive TB patients on antiretroviral therapy (ART)		65	(100)
HIV-positive people screened for TB		17 526	
HIV-positive people provided with IPT		665	
Treatment success rate			**(%)**
New cases registered in 2012			91
Previously treated cases registered in 2012			77
HIV-positive TB cases, all types, registered in 2012			
RR-/MDR-TB cases started on second-line treatment in 2011			72
XDR-TB cases started on second-line treatment in 2011			31
Laboratories 2013			**%**
Smear (per 100 000 population)			2
Culture (per 5 million population)			0.4
Drug susceptibility testing (per 5 million population)			0.4
Sites performing Xpert MTB/RIF			22
Is second-line drug susceptibility testing available?			Yes, in and outside country

Source: Global TB Report WHO, 2014 Ranges represent uncertainty intervals, ** Includes cases with unknown previous TB treatment history*

PAKISTAN

Islamic Republic of Pakistan is the second largest country in the South Asia. It is bordered by India to the east, China in the far northeast, Afghanistan to the west and north, Iran to the southwest and Arabian Sea in the south. The land area of the country is 796,095 square kilometers. There are five provinces, two regions and one Capital Territory. These areas are further divided into 141 districts.

Population of Pakistan was approximately 182 million as at the end of 2013. Adult male population 61 million, adult female population 57 million and children under 15 yrs are 65 million. Pakistan is ranked as the 6th most populous nation in the world. The major problems in health are due to poverty related communicable diseases, childhood illnesses, reproductive health problems and malnutrition.

Introduction

Tuberculosis (TB) continues to be a major public health challenge in Pakistan. Even though the country adopted the DOTS Strategy in 1995, major breakthrough was achieved only after revitalization of the dormant National TB Control Program (NTP) in 2001, when the government decided to tackle TB on war footing.

TB is the second most common cause of death from infectious diseases in the world. Eight million new TB cases are estimated to occur every year, more than 95% of these in the developing countries. Furthermore, 80% of the cases occur amongst people in 15-59 age bracket, representing a major economic burden for patients and ultimately for countries. This aspect is particularly relevant to the context of Pakistan.

The 22 countries referred to as high-burden countries account for 80% of the total TB burden worldwide. Although Sub-Saharan African has the highest incidence rate, highly populous countries of Asia namely, India, China, Indonesia, Bangladesh and Pakistan home the highest number of cases, and together, account for more than half the global burden. The HIV pandemic has led to a dramatic increase in the number of cases and worsening of treatment outcomes. Multi Drug Resistant (MDR) TB also represents a major challenge for TB control.

Government of Pakistan has declared TB as a National Emergency and adopted DOTS Strategy in 2001. The National and Provincial governments allocated resources for the TB Program. National

TB Control program (NTP), working under the Ministry of National Health Services, Regulation & Coordination, is fighting against Tuberculosis in the country to reduce mortality, morbidity and spread of TB infection. TB control program is integrated with Primary Health Care (PHC) system implemented by the district health authorities with the support of Provincial TB Control Programs (PTPs). NTP provides national stewardship to fulfill global commitment towards the MDGs. NTP acts as a collaborating body at the central level for development of uniform policies and strategies, facilitating the donor liaison at national and international levels. NTP at this point in time is implementing Global Fund supported grant through a mechanism of single stream of funding (SSF) as Principal Recipient.

TB Epidemiology

TB is still a major development challenge for Pakistan. It ranks 5thamongst the 22 HBCs and 4th among 27 MDR high burden countries in the world. According to national prevalence survey results, the incidence of 'all type' TB cases in Pakistan is 275/100,000 per year or around 500,000 new cases each year. The prevalence of the disease is much higher and is estimated at 342/100,000 population or 620,000 cases. In 2013, 288,910 TB cases (all types) were notified in Pakistan. Treatment success rate among new smear-positive cases was 91% for the cohort of patients registered in 2012.

According to Drug Resistance Survey (2012-13), the estimated incidence of DR TB was 4.3% among new TB cases and 19.4% among retreatment TB cases. The mortality rate i.e. the number of total deaths due to TB per 100,000 populations annually was 36/100,000 in 2013 as per Global Tuberculosis report 2014.

Achievements

- SAARC Consultative meeting to revise the SAARC Regional Strategy on HIV/AIDS (2012 – 2016).
- More than 2.1 million TB patients have been diagnosed and treated free of cost with quality assured anti TB drugs in both public and private sector across the country since 2001 through a network of 1500 quality assured microscopy centers and 5000 treatment centers.
- Approx. 300,000 TB cases were notified to National TB Control Program and Treatment Success Rate remained at 91% during 2013.
- National TB Control Program is conducting capacity building of all cadres of DOTS staff to enable them to provide quality DOTS services under health system strengthening through Objective 7 of the consolidate Grant.

- More than 7800 Managers and Doctors, and 11,000 Paramedics have been trained on Refresher Modules on Core TB DOTS.
- Since achieving the country-wide DOTS coverage in 2005, the National TB Control Programme, Pakistan has started expanding the scope of its activities to include TB/HIV interventions as recommended in the New Stop TB Strategy, through the Global Fund support.
- A National Technical Working Groups to address TB/HIV has also been formulated for development of national guidelines and manuals for screening and managing TB/HIV co-infected cases.
- The HDL intervention included management of adult and childhood TB cases according to the national guidelines.
- Provision of pediatric drugs and PPD for management of childhood TB cases in tertiary and secondary care hospitals.
- Two Master Trainings were conducted at the Federal Level. Master Trainers were trained on Management of Childhood TB and Adult Difficult to diagnose and Complicated TB;
- Total 30 Treatment Sites will be established across the country to address Programmatic Management of Drug-resistant Tuberculosis across the country.
- 800 Lab confirmed DR-TB patients were diagnosed and enrolled, in addition to 2049 already enrolled patients through 18 PMDT sites nationwide
- 8 Treatment Sites were renovated and up-graded for proper management of DR-TB to address Infection Control completed during the reporting period.
- DR-TB Patients who were on treatment on locally available second line drugs and waiting List were shifted to GLC approved (quality assured) second line drugs. Now all the DR-TB patients are on quality assured SLDs across the country.
- Scaling up of MDR-TB intervention is underway through Global Fund grant enabling 30 hospitals to manage more than 11,000 patients approximately over the total grant period of 5 years.
- MDR-TB intervention has been instituted in eighteen hospitals Mechanism for Food Support for MDR-TB patients has been developed and implemented through Utility Stores Corporation to ensure treatment adherence and increase treatment success.

Challenges

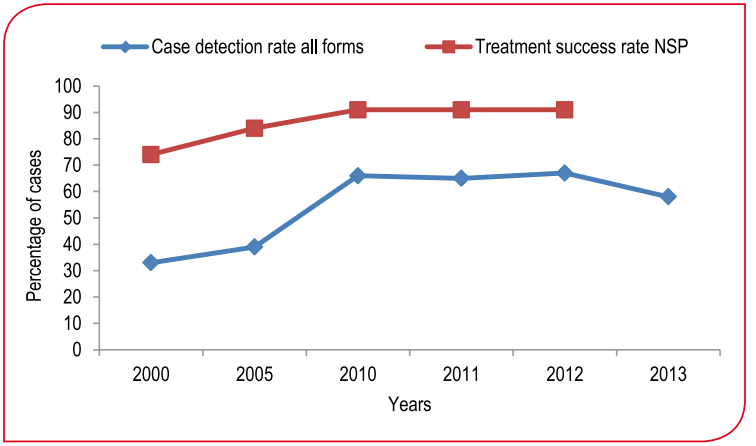
- The landscape of public health in Pakistan is dotted with numerous challenges.
- Provincial TB Control Programs PMDT roles and responsibilities need to be strengthened.
- Uncontrolled over-the–counter prescription of unknown quality SLD.
- Lack of internationally standard bio availability/bio equivalence laboratory testing facilities in the country.
- Peripheral linkage of DR-TB Ambulatory based model of care needs to be significantly strengthened.
- Provincial TB Control Programs PMDT roles and responsibilities need to be strengthened.
- Due to high turnover of staff and resistance from consultants and hospital administration, uniform implementation of national TB guidelines is still a challenge.
- Delayed approval of Training Plan from GF.

Future Plan

- NTP is developing its National Strategic Plan from year 2014-2020. This comprehensive document will be finalized by the first quarter of year 2014. The same document will be used to develop Concept Note for Global Fund requesting for funds beyond June 2015 in the New Funding Model
- NTP is also one of the countries which is planning to pilot and implement new R&R tools developed by WHO. A pilot will be conducted in all four provinces in first quarter of year 2014. NTP plans to implement these tools all across the country.
- Increase political commitment and involvement of major partners to ensure the sustainability of the National DOTS-Plus Project.
- Strengthening the linkages and up scaling the intervention in the round 11 of global fund.
- Research is a key strategic area identified in the National strategic and operational (PC1) plans as well as the new stop TB strategy.
- The current plan envisages social mobilization to contribute towards high utilization of desired TB services through private sector partner organization operating in communities.

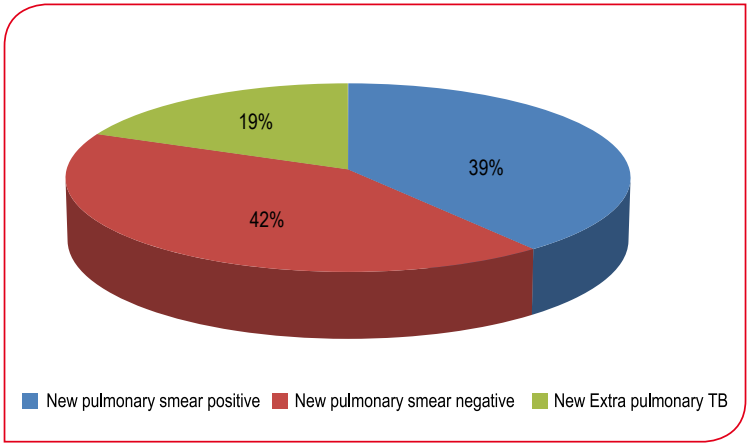
- The ACSM Unit of NTP has shown great leadership in designing, planning and executing ACSM interventions and further institutionalizing health communications for TB.
- The National Strategic plan 2020 envisages a major contribution from private sector through expansion in partnership and innovative approaches the table below explains the year wise projection from 20% to 40% case contribution in 2017.
- Plan to manage 80% of estimated DR-TB patients by 2017 and 100% by 2020 in line with MDR expansion plan and National Strategic plan.
- Plan to expand PMDT treatment sites to 30 units by the end of 2014.
- Plan to upgrade/establish 11 culture and 5 DST Laboratories in the country
- Provision of Social support (food basket & Travel Incentive) to all DR-TB patients and their Treatment Supporters.
- The NTP plans to expand HDL initiative in all the Tertiary Care hospitals, Children Hospitals and DHQ hospitals across Pakistan.

Case detection rate (all forms) and Treatment success rate for NSP cases (2000 – 2013)



Source: Global TB Report WHO, 2014

Percentage of Case notification by type of patient (2013)



Source: Global TB Report WHO, 2014

Epidemiology – 2013, Pakistan		Population 2013	182 million
Estimates of TB burden * 2013		**Number (thousands)**	**Rate (per 100 000 population)**
Mortality (excludes HIV+TB)		100 (45–170)	56 (25–92)
Mortality (HIV+TB only)		0.97 (0.56–1.5)	0.53 (0.31–0.82)
Prevalence (includes HIV+TB)		620 (520–740)	342 (284–406)
Incidence (includes HIV+TB)		500 (370–650)	275 (205–357)
Incidence (HIV+TB only)		2.6 (1.2–3.4)	1.4 (0.64–1.9)
Case detection, all forms (%)		58 (44–78)	
Estimates of MDR-TB burden * 2013		**New**	**Retreatment**
% of TB cases with MDR-TB		4.3 (2.8–5.7)	19 (14–25)
MDR-TB cases among notified pulmonary TB cases		9 900 (6 400–13 000)	3 100 (2 200–4 000)
TB case notifications 2013		**New ****	**Relapse**
Pulmonary, bacteriologically confirmed		111 682	6 303
Pulmonary, clinically diagnosed		118 279	0
Extrapulmonary		52 646	0
Total new and relapse		288 910	
Previously treated, excluding relapses		9 536	
Total cases notified		298 446	
Among 282 607 new cases: 28 113 (10%) cases aged under 15 years; male: female ratio: 1.0			
Reported cases of RR-/MDR-TB 2013	**New**	**Retreatment**	**Total ****
Cases tested for RR-/MDR-TB	5 161 (5%)	3 510 (22%)	12 777
Laboratory-confirmed RR-/MDR-TB cases			2 596
Patients started on MDR-TB treatment			1 495
TB/HIV 2013		**Number**	**(%)**
TB patients with known HIV status		8 306	(3)
HIV-positive TB patients		36	(<1)
HIV-positive TB patients on co-trimoxazole preventive therapy (CPT)			
HIV-positive TB patients on antiretroviral therapy (ART)			
HIV-positive people screened for TB			
HIV-positive people provided with IPT			
Treatment success rate			**(%)**
New cases registered in 2012			91
Previously treated cases registered in 2012			81
HIV-positive TB cases, all types, registered in 2012			
RR-/MDR-TB cases started on second-line treatment in 2011			70
XDR-TB cases started on second-line treatment in 2011			43
Laboratories 2013			**%**
Smear (per 100 000 population)			0.8
Culture (per 5 million population)			0.3
Drug susceptibility testing (per 5 million population)			0.2
Sites performing Xpert MTB/RIF			32
Is second-line drug susceptibility testing available?			Yes, in country

Source: Global TB Report WHO, 2014 Ranges represent uncertainty intervals, ** Includes cases with unknown previous TB treatment history*

SRI LANKA

Sri-Lanka is an island in the Indian Ocean with an area of 65,610 square kilometers. It has nine provinces and 25 administrative districts. Each province is governed by a Governor. Population in Sri-Lanka was 20 millions in 2013.

Introduction

The National Programme for Tuberculosis Control and Chest Diseases is a decentralized unit, which controls tuberculosis as well as other chest diseases in the country. It functions through a network of 23 District Chest Clinic and 2 Chest hospitals in close coordination with other general health institutions. The broad aim of the health policy of Sri-Lanka is to increase life expectancy and improve quality of life. This is to be achieved by controlling preventable diseases and by health promotion activities. Tuberculosis is still contributing to be major public health problem in the country.

The National Tuberculosis Control Programme (NTP) is a part of the national health services, which functions under the Deputy Director General, Public Health Services (DDG/PHS) within the Ministry of Health. The programme is headed by the Director National Programme for Tuberculosis Control and Chest Diseases (NPTCCD), and is responsible for the tuberculosis control activities of the entire country. It functions through a network of district chest clinics, branch chest clinics, chest hospitals and chest wards in close co-ordination with the general health services.

TB Epidemiology

Sri Lanka is not among the 22 high burden countries of tuberculosis. However, Tuberculosis remains a widespread problem and poses a continuing threat to the health and development of the people. The estimated annual risk of tuberculosis infection (ARTI) is 0.4% (0.2% – 0.7%). The highest rates of infection have been found in the most densely populated areas, such as Colombo and other urban areas.

The estimated prevalence and incidence rates of all forms of tuberculosis in 2013 were 109 and 66 per 100 000 population respectively. The notification rate of all forms of TB was 70%. Treatment success rates among new smear-positive cases were 86% for the cohort of patients registered in 2012.

HIV co-infection rate among TB patients was estimated at 0.07% in 2011. Since 1993, TB patients have been included under the HIV sentinel sero-surveillance survey and the data show consistently low TB/HIV co-infection rate. In 2012, 3379 TB patients were tested for HIV, almost double the number tested in 2011, as result of expansion of HIV screening in all district chest clinics and improved reporting; 23 TB patients were found to be HIV-positive (0.1% of all tested). Of TB patients counseled and tested for HIV in 2010 and 2011, 1.3% and 1.1% resulted HIV-positive, respectively. A national policy for provision of CPT and ART to HIV-positive TB patients is in place. In 2012, 22% of the TB/HIV patients detected were started on CPT and 48% were started on ART.

Laboratory network strengthening is ongoing. In 2012, the number of smear microscopy laboratories increased to 213 (1 laboratory per 100 000 population); EQA was carried out for 97% of these laboratories, and results showed acceptable performance for 91%. Quality-assured culture facilities currently number three, of which one is newly established. One Xpert MTB/RIF was deployed in the country in 2012 and it is mainly used for detection of MDR-TB among suspect cases.

Achievements

- The country was able to achieve 100% DOTS population coverage and sustain it thereafter.
- Treatment success rate for new smear positive cases was 82.9% in 2012.
- Defaulter rate in year 2012 was 4.6% and at present, the country is sustaining the WHO target of below 5%.
- Treatment failure rate in year was 2012 (0.7%).
- Modern technologies in diagnosis of TB were established. Culture facilities were extended to regional laboratories and work on two more culture laboratories were initiated in Jaffna and Galle.
- TB surveillance and control activities were further strengthened and integrated into primary health care system.
- TB control activities in the Northern Province were further strengthened through infrastructure development and human resource mobilization.
- Steps were taken to improve TB infection control activities in chest clinics.
- New initiatives were taken to improve activities on control of MDR-TB and TB/HIV co infection.
- Private/ public partnership in TB control activities has been further strengthened.

Challenges

- Maintaining an adequate level of trained health manpower in all health institutions which provide TB care.
- Maintaining an adequate numbers of trained health manpower in all health institutions which provide TB care.
- Provision of adequate opportunities for capacity development of various categories of health staff at local/ international level.
- Improving TB case detection among high risk social groups such as prisoners, drug addicts, estate population etc and proper management.
- Providing adequate services to both internal and external migrants, internally displaced and resettling populations.
- Improve early case detection and minimize deaths among TB patients.
- Overcoming the stigma attached to TB.
- Motivation of all care providers in TB control

New Initiatives

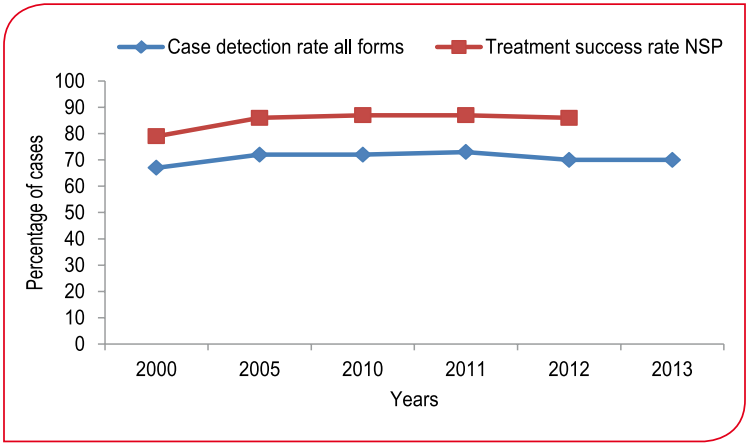
- Initiation of Infection Control activities in a planned manner in all chest clinics in the country.
- Carrying out an in depth epidemiological assessment in the country

Future Plan

- Further strengthening of TB control activities in North and East areas of the country.
- Capacity-building of central and district staff by training on procurement and supply management, MDR-TB, TB/HIV co infection, information technology literacy, data management, and operational research.
- Completion of infrastructure development at the national reference laboratory, upgrading to biosafety level 3.
- Further integration of TB control activities with existing primary health care network. Improved defaulter tracing and contact screening through field public health inspectors.
- Further improvement of quality DOT provision and expansion of provision of DOTS for community dot providers.

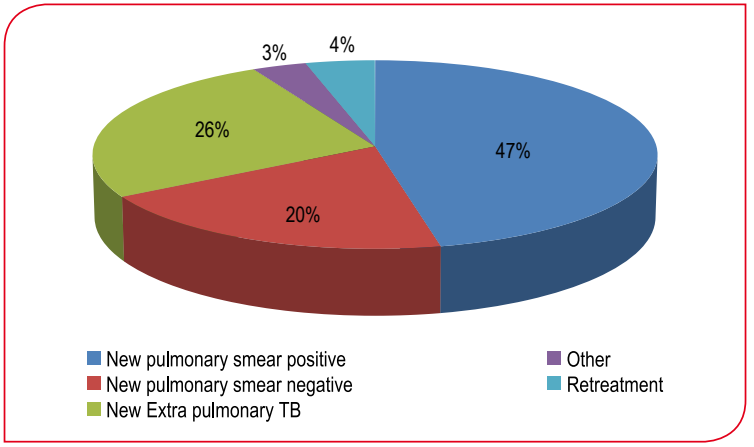
- Strengthening PPM in TB control by establishing DOT centres in private hospitals, linking private institutions to the programme data management system, and improving proficiency of private laboratories.
- Establishing interventions to address HIV-related TB (TB-HIV) and Drug –resistant TB with the developing the TB/HIV co-infection guidelines and the PMDT management guidelines
- Decentralization of TB control activities in the Colombo District
- Carrying out KAP survey to measure the impact of educational activities carried out so far
- Development and implementation of a comprehensive advocacy, communication and social mobilization plan based on the findings of the KAP survey.
- Implementation of the Infection Control Plan for chest clinics, TB wards and other health care facilities.
- Strengthening of diagnostic facilities by establishing culture and DST facilities and new rapid diagnostics in the selected health institutions.
- Improving quality of TB care provision by regular focused monitoring and supervision, by capacity building of staff and by improving infrastructure facilities.
- Reestablishing the Patient Information Management System (PIMS) software package and introducing online data transmission, networking among District Chest Clinics, National Reference Laboratory, Central Drug Stores and the NPTCCD
- Expanding PAL (Practical Approaches to the Lung Health) in selected districts in phasing out system.
- Thorough review of the programme by a Joint Monitoring Mission

Case detection rate (all forms) and Treatment success rate for NSP cases (2000 – 2013)



Source: National Programme for Tuberculosis & Chest Diseases, Sri Lanka, Data & Report, 2013

Percentage of Case notification by type of patient (2013)



Source: National Programme for Tuberculosis & Chest Diseases, Sri Lanka, Data & Report, 2013

Epidemiology – 2013, Sri-Lanka		Population 2013	21 million
Estimates of TB burden * 2013		**Number (thousands)**	**Rate (per 100 000 population)**
Mortality (excludes HIV+TB)		1.3 (0.99–1.6)	5.9 (4.7–7.3)
Mortality (HIV+TB only)		<0.01 (<0.01–0.01)	0.03 (0.01–0.05)
Prevalence (includes HIV+TB)		22 (11–36)	103 (53–170)
Incidence (includes HIV+TB)		14 (13–16)	66 (59–75)
Incidence (HIV+TB only)		0.025 (<0.01–0.047)	0.12 (0.04–0.22)
Estimates of MDR-TB burden * 2013		**New**	**Retreatment**
% of TB cases with MDR-TB		0.2 (0–1)	0.58 (0.07–2.1)
MDR-TB cases among notified pulmonary TB cases		13 (0–65)	2 (0–9)
TB case notifications 2013		**New ****	**Relapse**
Pulmonary, bacteriologically confirmed		4 459	243
Pulmonary, clinically diagnosed		2 040	0
Extrapulmonary		2 589	0
Total new and relapse		9 331	
Previously treated, excluding relapses		167	
Total cases notified		9 498	
Among 9 010 new and relapse cases: 310 (3%) cases aged under 15 years; male: female ratio: 2.0			
Reported cases of RR-/MDR-TB 2013	**New**	**Retreatment**	**Total ****
Cases tested for RR-/MDR-TB	920 (21%)	404 (99%)	1329
Laboratory-confirmed RR-/MDR-TB cases		12	2 596
Patients started on MDR-TB treatment		4	1 495
TB/HIV 2013		**Number**	**(%)**
TB patients with known HIV status		4 650	(49
HIV-positive TB patients		37	(<1)
HIV-positive TB patients on co-trimoxazole preventive therapy (CPT)		37	100
HIV-positive TB patients on antiretroviral therapy (ART)		37	100
HIV-positive people screened for TB		665	
HIV-positive people provided with IPT		9	
HIV-positive people provided with IPT			
Treatment success rate			**(%)**
New cases registered in 2012			86
Previously treated cases registered in 2012			59
HIV-positive TB cases, all types, registered in 2012			18
RR-/MDR-TB cases started on second-line treatment in 2011			83
XDR-TB cases started on second-line treatment in 2011			
Laboratories 2013			**%**
Smear (per 100 000 population)			1
Culture (per 5 million population)			0.7
Drug susceptibility testing (per 5 million population)			0.2
Sites performing Xpert MTB/RIF			1
Is second-line drug susceptibility testing available?			Yes, outside country

Source: Global TB Report WHO, 2014 Ranges represent uncertainty intervals, ** Includes cases with unknown previous TB treatment history*

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