This update of the Regional Strategic Plan for TB care and control 2006-2015 describes the future directions and focus of work for TB control in the WHO South-East Asia Region. The targets, strategies and interventions in this document are consistent with the Stop TB Strategy and the Global Plan to Stop TB 2011-2015, but focus on priorities most relevant to the Region.

A range of interventions is proposed. These interventions are aimed at accelerating progress in the context of evolving challenges, and the requirements of national TB control programmes in effectively meeting challenges. Developing these further will require flexibility and adaptation to suit the varying country contexts, the TB burden and the specific situations in Member countries of the Region. This document is intended for policy-makers, national programme managers and their staff, members of technical advisory groups, interagency coordinating committees or similar bodies, and all supporting partners.

Updated Regional Strategic Plan for TB Care and Control 2012–2015
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Abbreviations

ACSM advocacy, communication and social mobilization
AFB acid-fast bacilli
AIDS acquired immunodeficiency syndrome
ART antiretroviral therapy
ARV antiretrovirals
BCE Before Common Era
CPT co-trimoxazole preventive therapy
DOT directly observed therapy
DOTS the internationally recommended strategy for TB control and the foundation of the Stop TB Strategy introduced in 2006
DRS drug resistance surveillance
DR-TB drug-resistant tuberculosis
DST drug susceptibility testing
EQA external quality assurance
FDC fixed-dose combination
FLD first-line anti TB drugs
GDF Global (TB) Drug Facility
GF Global Fund to Fight AIDS, Tuberculosis and Malaria
HBC high burden (TB) country
HRD human resource development
HRH human resources for health
HSS health system strengthening
IC infection control
IPT isoniazid preventive therapy
IQC internal quality control
ISTC International Standards for TB Care
LED light-emitting diode microscopes
MDG Millennium Development Goal
MDR-TB TB multidrug-resistant tuberculosis
NTP national TB control programme
NRL national reference laboratory
OTC over-the-counter (sale of medicines)
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAL</td>
<td>practical approach to lung health</td>
</tr>
<tr>
<td>PMDT</td>
<td>programmatic management of drug-resistant tuberculosis</td>
</tr>
<tr>
<td>PPM</td>
<td>public–private mix</td>
</tr>
<tr>
<td>SCC</td>
<td>short course chemotherapy</td>
</tr>
<tr>
<td>SEA</td>
<td>South-East Asia</td>
</tr>
<tr>
<td>SEAR</td>
<td>South-East Asia Region (of WHO)</td>
</tr>
<tr>
<td>SLD</td>
<td>second-line anti TB drugs</td>
</tr>
<tr>
<td>TB</td>
<td>tuberculosis</td>
</tr>
<tr>
<td>TWG-TB</td>
<td>Technical Working Group on TB</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
<tr>
<td>XDR-RB</td>
<td>extensively drug-resistant TB</td>
</tr>
</tbody>
</table>
Preface

Substantial progress continues to be made by the Member States of the WHO South-East Region (SEAR) in combating tuberculosis (TB). However, the Region still bears more than one third of the global burden of tuberculosis. It has a pool of nearly 5 million cases to which more than 3 million are added each year. This is despite a more than 25% decrease in prevalence rate since 1990.

The mortality rate among TB patients has decreased by more than 44% during the same period. However, the absolute number of TB deaths is still close to half a million. This is mainly because of the population momentum. With good performance in the implementation of DOTS the level of multi-drug-resistant (MDR) TB among newly detected cases is low. Nonetheless, due to the large number of the total TB cases, the Region accounts for an estimated 105,000 MDR-TB cases. This is nearly one third of the world’s estimate.

HIV–TB coinfection is a serious problem in the SEA Region. National TB Control and National AIDS Control programmes in most countries in the Region are jointly implementing a comprehensive package of interventions against this problem. This is helping them cover an estimated 600 million people.

However, we need to recognize that these achievements can be successfully maintained in the long term only when national health systems based on the primary health care (PHC) approach function effectively. The primary health care approach is the key intervention to help ensure that the hard-to-reach, or the unreached populations are covered. Tuberculosis is a disease of poverty having strong social and economic determinants. Therefore, adequate social and economic support to control programmes, including TB patients, is critically important for the programme’s success.

An estimated one third of TB cases remain unreported. Such cases are of particular concern because they perpetuate continued disease transmission in the community and pose a serious risk of drug-resistant TB that leads to difficulty in its treatment, and to high TB mortality.
The long-term goal of TB control is to eliminate the disease as a public health problem. With this perspective in view, increased and continued commitment is needed from all stakeholders and partners. In the process of implementing the control programmes with external inputs, special attention should be paid to country capacity strengthening in order to achieve long-term, sustainable self-reliance. In this context, we need to recognize that improvement in the overall social and economic development of a country will contribute importantly in its long-term, sustained success in TB elimination or eradication. A comprehensive and holistic package of interventions for TB control must involve multispectral and multidisciplinary efforts.

This Updated Regional Strategic Plan for TB Care and Control: 2012–2015 aims to support Member States in their continued efforts to reach the TB-related Millennium Development Goals; making universal access to quality TB preventions, care and control services a reality to all persons living in the Member States of the South-East Asia Region.

Dr Samlee Plianbangchang
Regional Director
Why there is a need to update the Regional Strategic Plan to Stop TB

The launching of the Regional Strategic Plan to Control Tuberculosis (TB) 2006–2015 marked the transition from the DOTS strategy to the Stop TB Strategy as the regionally accepted strategy to control TB. This was reconfirmed by the WHO Regional Committee for South-East Asia held in 2007, which urged the Member States to “fully implement the national plans for TB control, in line with the New Stop TB Strategy which should include innovative approaches to improve both the quality as well as equity of delivery” (Annex 1).

There are several reasons why the original Regional Strategic Plan needs to be updated. Among the most important reasons are:

- the need to reflect progress made since 2006, as is demonstrated in Section 2. This also means resetting baselines and
revising the scope of the scale-up of interventions needed to reach the 2015 targets;

- policy changes related to HIV and ART and recognizing the development of the *Regional Health Sector Strategy on HIV 2011-2015* (SEA-AIDS-187);

- the development of the South-East Asia (SEA) Regional Response Plan for Drug-resistant TB Care and Control 2011-2015;

- the need to give a higher profile for laboratory strengthening and progress in diagnostics, in particular the substantial progress in development of new diagnostics made since 2005;

- the need to reflect revised epidemiological projections including the update of the burden of TB among people living with HIV in 2008 and an update of the burden of MDR-TB in 2010;

- the need to reflect the increased importance of TB in children; and

- the need to put additional emphasis on early and intensified case notification.

Many countries in the SEA Region have revised, or are in the process of revising or amending their national strategic plans. These national plans have contributed to updating of the Regional Strategic Plan.
**Introduction**

Tuberculosis has been present in humans since antiquity. Skeletal remains show prehistoric humans had TB, and researchers have found tubercular decay in the spines of Egyptian mummies dating from 3000 to 2400 BCE*. “Phthisis” is a Greek term for consumption; around 460 BCE, Hippocrates identified phthisis as the most widespread disease of the times. It was said to involve fever and the coughing up of blood, which was almost always fatal.

In 1991, the Forty-fourth World Health Assembly recognized the growing importance of TB and the potential for cost-effective control using currently available tools: the Health Assembly endorsed the global TB strategy that aims to provide adequate and efficient treatment, i.e. short course chemotherapy (SCC) to, at least, all smear-positive TB cases identified.

* BCE: Before Common Era
Two years later, in April 1993, recognizing that TB is one of the most neglected global health crises and that the TB epidemic is out of control in many parts of the world, TB was declared by WHO to be a global emergency.\(^1\)

In the *Tuberculosis Notification Update*, the Tuberculosis Programme, Division of Communicable Diseases; World Health Organization (WHO), Geneva, published data in July 1992 showing that the WHO South-East Asia Region had notified 43% of the global total notified cases. Country-by-country data from the Region showed that 994,436 cases of TB were notified, of which 88% were notified in India (*Figure 1a and 1b*).

Much progress has been made in the SEA Region since. However, too many people still have undetected TB for too long; late detection of TB increases their risk of transmitting the disease to others, having poor health outcomes, or that they and their family will suffer distress and economic hardship. TB remains a major cause of morbidity and mortality in many countries in the Region and a significant public health problem worldwide despite the availability of highly efficacious treatment for decades.

Achieving the goals and objectives of TB Control will require actions not only by and beyond TB control programmes, but also by and beyond the health sector. Where general health services are inadequate or absent, it is not possible to scale up even basic DOTS; TB programmes will not be able to scale up MDR-TB treatment without adequately equipped laboratories, competent health-work force, and without abolishing financial barriers patients encounter in seeking services; if anti TB drugs continue to be available over the counter and used irrationally by private providers, efforts of TB programmes to provide care based on international standards will have limited impact; if TB is not systematically notified and vital registration systems remain weak, it will continue to hamper national and global TB surveillance. It is often beyond the capacity of TB programmes alone to address these and other systemic issues.

This update of the *Regional Strategic Plan for TB Care and Control 2012-2015* describes the future directions and focus of work for TB control in the South East-Asia Region (SEAR). The targets, strategies and interventions in this document are consistent with the *Stop TB Strategy and the Global...*\(^2\)

\(^1\) WHO Tuberculosis Programme: Framework for Effective Tuberculosis Control (WHO/TB/94.179).
Plan to Stop TB 2011-2015, however it focuses on focussing priorities most relevant to SEAR. A range of interventions are proposed. These are aimed at accelerating progress in the context of evolving challenges, and the requirements of national TB control programmes in effectively meeting the challenges. Developing these further will require flexibility and adaptation to suit the varying country contexts, the TB burden and the specific situations in Member States in the Region. This document is intended for policy-makers, national programme managers and their staff, members of technical advisory groups, inter-agency coordinating committees or similar bodies and all partners. The South-East Asia Regional Response Plan for Drug-Resistant TB Care and Control 2011-2015 (SEA-TB-334) and the Regional Health Sector Strategy on HIV 2011-2015 (SEA-AIDS-187) should be seen as supporting and complementing documents, as are the Report of the National TB Control Programme Managers and Partners Meeting in Bangkok, Thailand, 6-9 December 2011 (SEA-TB-339) and the Report of the Fourth Meeting of the SEAR Technical Working Group on Tuberculosis (TWG-TB) 11-13 April 2012.

Figure 1a: Tuberculosis in SEAR 1990

The Global Plan to Stop TB 2006-2015 has been updated and now covers the period 2011-2015.
Table 2.5: South East Asian Region – Cases of Tuberculosis Notified to WHO
As of July 1992

<table>
<thead>
<tr>
<th>COUNTRY / AREA</th>
<th>Average 83–87 Cases</th>
<th>Rate per 100 000 population</th>
<th>Last report (*) Cases</th>
<th>Rate per 100 000 population</th>
<th>Percent change between 83–87 &amp; last report</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Bangladesh</td>
<td>46279</td>
<td>45.8</td>
<td>56052</td>
<td>47.2</td>
<td>2011 21.1% 3.1%</td>
</tr>
<tr>
<td>2 Bhutan</td>
<td>1037</td>
<td>76.1</td>
<td>4232</td>
<td>279.2</td>
<td>1989 308.2% 286.7%</td>
</tr>
<tr>
<td>3 DPR/Korea</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 India</td>
<td>879524</td>
<td>14.3</td>
<td>1335258</td>
<td>153.2</td>
<td>1991 51.8% 34.0%</td>
</tr>
<tr>
<td>5 Indonesia</td>
<td>27307</td>
<td>16.1</td>
<td>74470</td>
<td>40.4</td>
<td>1990 172.7% 150.3%</td>
</tr>
<tr>
<td>6 Maldives</td>
<td>11/7</td>
<td>56.3</td>
<td>182</td>
<td>70.7</td>
<td>1990 30.4% 21.3%</td>
</tr>
<tr>
<td>7 Mongolia</td>
<td>2981</td>
<td>119.5</td>
<td>1577</td>
<td>70.1</td>
<td>1991 −30.9% −41.4%</td>
</tr>
<tr>
<td>8 Myanmar</td>
<td>10865</td>
<td>20.0</td>
<td>10058</td>
<td>28.3</td>
<td>1989 −3.0% −12.7%</td>
</tr>
<tr>
<td>9 Nepal</td>
<td>44</td>
<td>2.6</td>
<td>1603</td>
<td>8.4</td>
<td>1988 263.3% 221.0%</td>
</tr>
<tr>
<td>10 Sri Lanka</td>
<td>638</td>
<td>39.7</td>
<td>6174</td>
<td>35.4</td>
<td>1991 −3.3% −10.7%</td>
</tr>
<tr>
<td>11 Thailand</td>
<td>20177</td>
<td>39.1</td>
<td>20237</td>
<td>36.3</td>
<td>1990 0.3% −7.1%</td>
</tr>
<tr>
<td>Regional total</td>
<td>994436</td>
<td>85.4</td>
<td>1510311</td>
<td>115.1</td>
<td>1990 51.9% 34.8%</td>
</tr>
<tr>
<td>No. of countries reporting</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of countries reporting</td>
<td>90.9%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average year of last report</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: The Tuberculosis Notification Update, July 1992, the Tuberculosis Programme, Division of Communicable Diseases; WHO, Geneva (WHO/TB/92.169).
3.1 Global targets and the Stop TB strategy

Recognizing the scale of the problem, global targets for reductions in the burden of TB disease (measured as incidence, prevalence and mortality) have been set within the context of the Millennium Development Goals (MDGs) and by the Stop TB Partnership (Box 1). The target set within the MDGs is to halt and reverse the incidence of TB by 2015. In addition, the MDGs include three other indicators for measurement of progress in TB control: prevalence and death rates, and the proportion of cases that are detected and cured in TB control programmes based on the DOTS strategy.

The MDG target has been endorsed by the Stop TB Partnership. The Partnership has also set two additional targets for 2015: to halve TB...
prevalence and death rates by 2015, compared with 1990 levels; and, looking further into the future, the target of eliminating TB by 2050.

**Box 1: Goals, targets and indicators for TB control: 2015 and 2050**

<table>
<thead>
<tr>
<th>TB MDG GOALS (set for 2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal 6: Combat HIV/AIDS, malaria and other diseases</strong></td>
</tr>
<tr>
<td>Target 6c: Halt and begin to reverse the incidence of malaria and other major diseases</td>
</tr>
<tr>
<td>Indicator 6.9: Incidence, prevalence and death rates associated with TB</td>
</tr>
<tr>
<td>Indicator 6.10: Proportion of TB cases detected and cured under DOTS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STOP TB Partnership targets (set for 2015 AND 2050)</th>
</tr>
</thead>
<tbody>
<tr>
<td>By 2015: Reduce the prevalence and death rates by 50%, compared with their levels in 1990</td>
</tr>
<tr>
<td>By 2050: Eliminate TB as a public health problem, defined as the global incidence of active TB of less than one case per 1 million population per year</td>
</tr>
</tbody>
</table>

In 2006, WHO launched the *Stop TB Strategy (Box 2)* as the internationally-recommended approach to reducing the burden of TB in line with global targets set for 2015. The goal of the strategy is defined as: “To dramatically reduce the global burden of TB by 2015 in line with the Millennium Development Goals and the Stop TB Partnership targets”. The Strategy has six major components (*Box 2*). The *Stop TB Strategy* was developed as a successor to the DOTS strategy. The DOTS strategy is the basic package consisting of five elements (see *Box 2*, under the first component) that underpins the *Stop TB Strategy*, and was the principal globally recommended approach to TB control from the mid-1990s up to 2006.

Since the launch of the Stop TB Strategy in 2006, all 11 Member States of SEAR have formally endorsed the strategy and based their subsequent updates of national strategic plans on local adaptations of the strategy.
Box 2: The Stop TB Strategy at a glance

<table>
<thead>
<tr>
<th>Vision</th>
<th>A TB-free world</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal</td>
<td>To dramatically reduce the global burden of TB by 2015 in line with the Millennium Development Goals and the Stop TB Partnership targets</td>
</tr>
<tr>
<td>Objectives</td>
<td>Achieve universal access to high-quality care for all people with TB</td>
</tr>
<tr>
<td></td>
<td>• Reduce the human suffering and socioeconomic burden associated with TB</td>
</tr>
<tr>
<td></td>
<td>• Protect vulnerable populations from TB, TB/HIV, and drug-resistant TB</td>
</tr>
<tr>
<td></td>
<td>• Support development of new tools and enable their timely and effective use</td>
</tr>
<tr>
<td></td>
<td>• Protect and promote human rights in TB prevention, care and control</td>
</tr>
<tr>
<td>Targets</td>
<td>MDG 6, Target 6.c: Halt and begin to reverse the incidence of TB by 2015.</td>
</tr>
<tr>
<td></td>
<td>• Targets linked to the MDGs and endorsed by the Stop TB Partnership:</td>
</tr>
<tr>
<td></td>
<td>• By 2015: reduce the TB prevalence and death rates by 50% relative to 1990.</td>
</tr>
<tr>
<td></td>
<td>• By 2050: eliminate TB as a public health problem (&lt;1 case per million population).</td>
</tr>
</tbody>
</table>

Components

1. **Pursue high-quality DOTS expansion and enhancement**
   - Political commitment with increased and sustained financing
   - Ensure early case detection and diagnosis through quality-assured bacteriology
   - Provide standardized treatment with supervision and patient support
   - Ensure effective drug supply and management
   - Monitor and evaluate performance and impact

---

2. **Address TB/HIV, MDR-TB, and other needs of poor and vulnerable populations**
   - Scale up collaborative TB/HIV activities
   - Scale up prevention and management of MDR-TB
   - Address the needs of TB contacts, and of poor and vulnerable populations

3. **Contribute to health system strengthening, based on primary health care**
   - Help improve health policies, human resource development, financing, supplies, service delivery and information
   - Strengthen infection control in health services, other congregate settings and households
   - Update laboratory networks, and implement the Practical Approach to Lung Health (PAL)
   - Adapt successful approaches from other fields and sectors and foster action on the social determinants of health

4. **Engage all care providers**
   - Involve all public, voluntary, corporate and private providers through public-private mix (PPM) approaches
   - Promote the use of the International Standards for Tuberculosis Care (ISTC)

5. **Empower people with TB and communities through partnerships**
   - Pursue advocacy, communication, and social mobilization
   - Foster community participation in TB care, prevention and health promotion
   - Promote the use of the Patients’ Charter for Tuberculosis Care

6. **Enable and promote research**
   - Conduct programme-based operational research
   - Advocate for and participate in research to develop new diagnostics, drugs and vaccines

3.2 **Progress towards TB control – the global perspective**

The number of people who fell ill with TB dropped to 8.8 million in 2010, including 1.1 million cases among people with HIV. The number has been falling since 2005. The estimated global incidence rate fell to 128 cases per
100 000 population in 2010, after peaking in 2002 at 141 cases per 100 000. The rate is falling but very slowly. The number of people who died from TB fell to 1.4 million in 2010, including 350 000 people with HIV, equal to 3 800 deaths a day. In 2009, 9.7 million children were orphaned by TB. It is among the three greatest causes of death among women aged 15-44, 320 000 women died from TB in 2010.

The TB death rate has fallen by 40% since 1990, and the number of deaths is also declining. In 2010, 5.7 million TB cases were notified through TB DOTS programmes. Globally, the percentage of people successfully treated reached its highest level at 87% in 2009. Since 1995, 46 million people have been successfully treated and up to 6.8 million lives saved through DOTS and the Stop TB Strategy.

Figure 2: Number of people falling ill and dying of TB is declining

Global trends in estimated incidence rate, including HIV-positive (top) and estimated incidence rate of HIV-positive (lower) TB.

The horizontal (dash) lines represent the Stop TB Partnership target of a 50% reduction in prevalence and mortality by 2015 compared with 1990. Mortality excludes TB deaths among people living with HIV.

While more people were being treated for MDR-TB in 2010, they were just 16% of the estimated number of MDR-TB patients that needed treatment i.e. MDR-TB patients that would be identified if all newly notified TB patients were tested for drug resistance.

In 2010, 2.1 million TB patients knew their HIV status compared with 1.6 million in 2009, with the highest HIV testing rates of TB patients in Europe (80%) and Africa (59%). In 68 countries, including 22 in Africa, at least 75% TB patients knew their HIV status. In 2010, 77% HIV-positive TB patients who were started on co-trimoxazole preventive treatment were enrolled on antiretrovirals (ARVs). The progress made towards targets laid out in the Global Plan to Stop TB is illustrated in Table 1.

As of July 2011, 26 countries were using Xpert MTB/RIF, a rapid molecular test that accurately diagnoses TB and MDR-TB in 100 minutes. The test was endorsed by WHO in December 2010, with 145 countries eligible to purchase the kits at a concessional price.

In the areas of research and development, “point-of-care” tests are in the pipeline, 10 TB drugs in trials, and there are 10 vaccine candidates for the prevention of TB in Phase I or Phase II trials.5

Worldwide, the share of domestic funding for TB provided by affected countries rose to 86%. But most low-income countries still rely on external funding, with the Global Fund being the largest external donor. It provide 82% of international TB funding for 2012. Countries reported a US$ 1 billion TB funding gap for 2012 with donor funding at US$ 600 million. There was a US$ 200 million funding gap for MDR-TB in 2012 (Figure 3).

### Table 1: Global progress towards targets

<table>
<thead>
<tr>
<th>The Global Plan to Stop TB Progress towards targets</th>
<th>2010</th>
<th>Target (2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOTS Cases diagnosed, notified and treated, according to the DOTS approach</td>
<td>5.7m</td>
<td>6.9m</td>
</tr>
<tr>
<td>Treatment success rate</td>
<td>87%</td>
<td>90%</td>
</tr>
<tr>
<td>Countries with ≥ 1 laboratory with sputum-smear microscopy services / 100 000 population</td>
<td>97</td>
<td>149</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Drug-resistant TB</th>
<th>2010</th>
<th>Target (2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of previously-treated TB patients tested for MDR-TB</td>
<td>6%</td>
<td>100%</td>
</tr>
<tr>
<td>% of new bacteriologically-positive patients tested for MDR-TB</td>
<td>1.8%</td>
<td>20%</td>
</tr>
<tr>
<td>Countries among the 22 HBCs and 27 MDR-TB burden countries with ≥ 1 culture laboratory/5 million population</td>
<td>20</td>
<td>36</td>
</tr>
<tr>
<td>Confirmed cases of MDR-TB enrolled on treatment</td>
<td>46,000</td>
<td>~270,000</td>
</tr>
<tr>
<td>Treatment success rate among confirmed cases of MDR-TB</td>
<td>53%</td>
<td>≥ 75%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TB / HIV</th>
<th>2010</th>
<th>Target (2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of TB patients tested for HIV</td>
<td>34%</td>
<td>100%</td>
</tr>
<tr>
<td>% of HIV-positive TB patients treated with CPT</td>
<td>77%</td>
<td>100%</td>
</tr>
<tr>
<td>% of HIV-positive TB patients treated with ART</td>
<td>46%</td>
<td>100%</td>
</tr>
<tr>
<td>% of people living with HIV attending HIV care services, screened for TB at their last visit</td>
<td>58%</td>
<td>100%</td>
</tr>
<tr>
<td>% of people living with HIV attending HIV care services, enrolled on IPT</td>
<td>12%</td>
<td>100%</td>
</tr>
</tbody>
</table>
3.3 Progress towards TB control – current situation in the SEA Region

The SEA Region is home to 26% of the world’s population, but 40% of prevalent TB patients. This translates to approximately 5 million cases and 500 000 deaths per year (Figures 4 and 5). Five of the 11 Member States in the Region
are among the 22 countries with the highest burden of TB in the world and India alone accounts for more than 25% of the world’s incident cases.

However, countries in the SEA Region have made significant progress towards the TB-related MDGs. The estimated rates of incidence, prevalence and mortality of all forms of TB continue to show a downward trend. Figure 6 shows trends in estimated TB prevalence, incidence and mortality rates from 1990 to 2010. Most countries in the Region have been observing an incrementing or stabilizing trend of smear-positive case notifications.

Figure 4: Estimated proportional contributions of WHO Regions to global incidence of all forms of TB, 2010

Estimated global TB incidence = 8 800 000 (8 500 000 – 9 200 000) cases (all forms of TB).

However, nationwide prevalence surveys have showed that TB burden in most countries is much bigger than what was previously estimated. The findings of the recently completed national survey in Myanmar are challenging, however they point the way forward to improve TB care and control. The survey under way in Thailand will provide further information and understanding.
Notifications continue to rise, reflecting case-finding efforts in Member States over time, with a sharper increase in notifications of all forms of TB (especially from 2000 to 2008), possibly due to increasing registration of smear-negative and extra-pulmonary cases following the involvement of the private sector and medical teaching institutions (see also Figures 7, 8 and Annex 2).

Figure 7: Trends in TB cases notified by type of case, WHO SEA Region, 1993-2010

Sources: Tuberculosis control in the South-East Asia Region, Annual Reports 1996-2011, WHO/SEARO; Annual Reports, National TB programmes, SEAR Member States, 2011

Figure 8: Proportion of smear-positive pulmonary TB (PTB), smear-negative PTB and extra-pulmonary TB cases out of all new notified cases, Member States, SEA Region, 2010

Source: Annual Reports, National TB programmes, SEAR Member States, 2011
The treatment success rate among new smear-positive cases has continued to increase (Figure 9).

**Figure 9: Treatment success rate**


The high treatment success rates achieved by the well-functioning national TB prevention, care and control programmes in the Region, have led to a slow but steady decline in TB incidence rates during the past decade. This has also kept multidrug resistance (MDR) at levels relatively low (range: 1.7%–4.2% among new cases). Among previously treated cases in the Region, MDR-TB rates range from 10.0%–34.7%. However, given the large numbers of TB cases in the SEA Region, this translates to 105 000 MDR-TB cases, accounting for nearly one third of the world's MDR-TB cases. In 2010, around 4000 patients with MDR-TB had been registered for treatment in the Region, representing only a fraction of the estimated cases. However, by September 2011 India alone reported 5000 patients initiated on treatment with second-line anti-TB medicines. Initial treatment success rates of 65% and higher have been reported.

An estimated 3.5 million persons are estimated to be living with HIV/AIDS in the South-East Asia Region. The Region is distinguished by a complex, heterogeneous HIV epidemic at different stages across different countries.
and geographical areas within individual countries. Regionally, the number of new infections every year is showing a downward trend in four of the five high HIV burden countries, namely India, Myanmar, Nepal and Thailand; in Indonesia, the HIV epidemic is still on the rise (**Figure 10**).

**Figure 10: Estimated number of new HIV infections in the South-East Asia Region and in five Member States in the Region, 1990-2010**

![Graph showing the estimated number of new HIV infections in the South-East Asia Region and in five Member States from 1990 to 2010.](image)

Source: Spectrum model using surveillance data reported by national AIDS programmes, Member States, South-East Asia Region

The South-East Asia Region accounts for nearly 15% of the global burden of new HIV-positive tuberculosis cases. The HIV prevalence among new TB patients is 5.7%. The need to urgently address TB–HIV is well understood in the Region. A regional strategic plan for HIV has been developed, adapting global strategies and guidelines to the unique needs of the Region. Paediatric TB remains largely neglected, as shown by the very low notification rate in the age group below 15 years of age. In 2010, notification data with a breakdown by paediatric age groups were available in few countries of the Region.
Challenges and opportunities

Substantial progress has been made in countries of the SEA Region in implementing the Stop TB strategy towards achieving the TB-related MDG targets. However, there is a long road ahead to travel to eliminate TB in the Region as well as globally. The Region faces significant challenges; however there are also new opportunities.

4.1 Ineffective and delayed diagnosis of persons with TB, including children

While the geographical/administrative DOTS coverage in the Region has been reported at 100% since 2007, many people still do not have access to high-quality services for TB prevention, care and control. Case notifications continue to rise, reflecting case-finding efforts in SEAR Member States over time, however current case notifications indicate that more than a third of
the estimated incident TB cases in the Region are either not detected or not notified (Figure 11).

Figure 11: Case notifications by WHO region, 1990-2010


This has also been demonstrated in the recent prevalence survey, e.g. in Myanmar. Factors contributing to suboptimal case detection include poor knowledge and awareness of the population; geographical, social and financial barriers; suboptimal identification by health services of persons suspected of having TB; suboptimal diagnostic procedures, referral and notification practices (public and private) including little attention paid to children; and limited screening of high-risk groups e.g. children, contacts, clinical risk groups and risk populations. Paediatric TB remains a neglected area as demonstrated by the very low notification rate in the age group below 15 years.
4.2 Slow progress in scaling up programmatic management of drug-resistant TB

Despite commitments made at the ministerial meeting of high M/XDR-TB burden countries in Beijing, China in April 2009, that brought together high-level representatives from the 27 high MDR-TB burden countries, which collectively account for around 85% of the world’s cases of MDR-TB, the scale up of programmatic management of drug-resistant TB (PMDT) has been slow. In May 2009, the World Health Assembly resolution WHA62.15 urged the Member States “to achieve universal access to diagnosis and treatment of multidrug-resistant and extensively drug-resistant tuberculosis”. The World Health Assembly called on all countries to implement the measures needed to achieve universal access to diagnosis and treatment of MDR-TB by 2015, including strengthening of basic TB control, development of laboratory capacity for diagnosis, establishment of comprehensive patient management and care programmes, effective collaboration with HIV programmes, strengthening of health information and surveillance systems and acceleration of research and development related to new tools for prevention, diagnosis and treatment.

In the SEA Region relatively low levels of multi drug-resistance (1.7-2.5%) are reported among newly detected cases but higher rates (17%) among previously treated cases. However this translates into around a fourth or nearly 105 000 of the world’s MDR-TB cases estimated to occur annually in the Region. Extensively drug-resistant TB (XDR-TB) has also been reported from five countries in the Region, making the situation alarming.

Several overriding challenges are faced in the Region with regard to addressing the DR-TB issues:

- The PMDT is at various stages of implementation in Member States of the Region. The countries are facing challenges in incorporating the management of MDR-TB into their national TB programmes. As of now, less than 5% of the estimated MDR-TB cases are being registered for treatment by national TB control programmes (NTPs). A huge proportion of cases are either not getting treatment or are being treated under unknown conditions with a high chance of a non-standardized regimen being used. The situation is further complicated by overburdened health infrastructures, specifically, overcrowded hospitals with inadequate infection control (IC) measures, which leads to the further spread of infection.
A substantial amount of additional resources is required to provide adequate human resources and training to create a pool of skilled, motivated and available personnel, to provide quality infrastructure for diagnosis, patient management including adequate quality-assured, second-line anti TB medicines, and surveillance.

The costs of containment of the already existing MDR-TB are high—each MDR-TB patient requires drugs that cost 100 times more than drugs for drug-susceptible TB patients. Other costs that have to be borne by the system and patient are additional. Political commitment is often not sufficient to ensure required resources.

There is insufficient involvement of professional societies and their members;

The capacity of national pharmaceutical regulatory authorities to assure quality of first-line anti-TB drugs (FLDs) and second-line anti TB drugs (SLDs) is limited.

Community based organizations and civil society partners have not yet been fully involved.

Multi center research in new treatment protocols for TB and MDR-TB management is insufficient.

Therefore, to have the capacity at country level to successfully manage the PMDT scale-up, major investments are needed at country level to strengthen the capacity and to address these challenges and bottlenecks.
4.3 Slow progress in scaling up TB-HIV collaborative activities

About three quarters of TB cases in the Region do not know their HIV status; only 23% of the 2,126,414 notified TB patients have been tested for HIV; 9.5% of those tested were identified as HIV positive; 87% of identified HIV-positive TB patients were started on CPT while 57% were started on ART.6

Progress has been made in addressing TB-HIV with national governments in the Region acknowledging the importance of addressing the growing TB-HIV problem. However, issues and challenges of TB/HIV still remain. Programmatic challenges include service delivery mismatch, limited availability of HIV test kits, shortage of trained and skilled personnel and limited involvement of the private sector. Various challenges are also faced at the operational level including the lack of a sense of urgency in addressing this important public health problem. TB-HIV coordination mechanisms are in place; however the level of collaboration for planning, guidance and oversight is sub-optimal. Many common health system constraints remain un addressed and the stigma

imposed on the TB-and HIV-infected patients and the fear on part of health workers are still prevalent.

A regional response plan for TB-HIV collaborative activities is under development. It will offer new opportunities to address identified challenges.

4.4 Inadequate laboratory capacity

The current laboratory capacity in the Region remains inadequate to reach global and regional targets for the diagnosis of drug-resistant TB and HIV-associated TB. Although major progress had been made in 2010, three of the countries in the Region still did not meet the target of 1 microscopy centre per 100 000 population. However, even in countries that meet the target, country-specific conditions such as geographically challenging situations mean that microscopy services are currently not available to all in need. Eight of the countries in the Region had less than the recommended capacity of 1 laboratory to perform culture and DST per 5 million population. All but one country have designated national reference laboratories; however, only four countries have second-line DST available.

Earlier and improved detection of TB cases and the expanded capacity to diagnose cases of MDR-TB are regional priorities, requiring new diagnostics tests, clear policies on which tests to use, and when not to use, and strengthened laboratories in which tests can be safely and effectively carried out. Following the WHO endorsement of the Xpert MTB/RIF assay in December 2010, six countries in the Region have started using the machines. However, several operational challenges need to be addressed for successful implementation of the test including revised diagnostic algorithms, definition of risk groups and levels for the health system in which the test should be used first, and analysis of logistic considerations to optimize the use and benefits of technology. The biggest challenge to countries however remains ensuring the availability of access to treatment services once MDR-TB disease has been diagnosed.

The implementation of WHO policy guidance with particular attention to rapid diagnosis of drug-resistant TB in the Region is shown in Table 2. The capacity to conduct conventional DST is relatively high, however the uptake of newer diagnostics is slower, illustrating operational challenges in
most countries. Such challenges include activities to overcome the current insufficient coordination at country level between NTPs and other government structures responsible for overall laboratory strengthening.

Table 2: Implementation of WHO policy guidance for diagnosis in high-burden countries in SEAR, 2012

<table>
<thead>
<tr>
<th>Conventional drug susceptibility testing (DST)</th>
<th>Liquid Culture and rapid specification test</th>
<th>Line-probe assay for detecting resistance to Rifampicin</th>
<th>Algorithm for the diagnosis of TB in HIV-positive people</th>
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(Bangladesh, India, Indonesia, Myanmar, Thailand)


4.5 Weak health systems and limited programme management capacity

4.5.1 Weak health systems

Health systems form the backbone of a country’s health effort. They are the means to deliver policy goals and the key to operationalizing a selected policy approach to address the health needs of a country – scaling up health systems constitutes the core of a strategy to achieve universal coverage, an important platform for interaction between multisectoral health stakeholders, and an important interface between health and overall development. Good health systems are those that deliver effective, high-quality health interventions to people who need them, when and where they need them, and with the minimum waste of resources. Services may be delivered in the home, in the community, the workplace or in health facilities.

TB prevention, care and control are heavily dependent on strong primary health care systems. Many of the constraints to effective implementation of TB prevention, care and control services in the Member States are related to underlying weak and underfinanced national health systems in general, many of which are already overstretched in terms of both infrastructure and staffing. Weak health systems are further challenged by the increasing
burden of HIV/AIDS, DR-TB as well as non-communicable diseases. The rapid scaling-up of HIV, TB, malaria and immunization programmes has reinforced awareness of the well-known weaknesses in health systems and services (Box 3), that require new strategies and new funds in addition to those serving the urgent needs to address priority public health conditions. There is consensus that strengthening health systems is essential if the health MDGs are to be achieved. The need to urgently address the weaknesses of the health system was also reiterated at the ministerial meeting of High M/ XDR-TB Burden Countries organized in Beijing in April 2009.7

Many challenges in health system strengthening are beyond the influence of TB control programmes alone. Challenges relate to fiscal issues for expanding resources for the health sector, building development, planning and budgetary frameworks that prioritize poverty reduction and development objectives, civil service structures, broad health sector reforms and decentralization policies.

An increasing number of countries in the Region are implementing various models of health sector reforms and decentralization policies to develop effective and equitable health services to achieve favourable health outcomes, including for TB. There are examples of strengthening of the regulatory framework with a number of laws and regulations relevant for TB control. These reforms provide for an expanded network, as well as increased capacity for providing services closer to communities. They also help to strengthen linkages with related programmes, and in the adaptation of effective approaches used by various other health programmes. All this leads to greater sustainability in the longer term. It is critical that TB services are effectively positioned and streamlined within basic health-care services during the process of health systems development to optimize both the implementation of TB prevention, care and control services and their contribution to the strengthening of health services as a whole. Opportunities are there for NTPs to join forces with other health-care programmes and stakeholders involved in health systems development to strengthen human resources, increase health financing and improve health system management including functioning referral, transfer and information-sharing mechanisms between various public and private health-care providers.

7 The Ministerial Meeting of High M/XDR-TB Burden Countries, 1-3 April 2009, Beijing, China (WHO/HTM/TB/2009.415)
### Leadership and governance (stewardship)

- Weak capacity for health policy analysis, priority-setting, sector policy development and central health sector management. This may involve limitations in the quantity of human resources for health, and their capacity, as well as limitations related to planning, decision-making and management structures.

- Poor coordination between different parts of ministries of health, for example between different public health programmes (e.g., AIDS and TB), and/or between departments responsible for public health, curative and diagnostic services, drug supply and other logistics, information systems, etc.

- Poor coordination between different public sector entities involved in health care planning and implementation, including limited coordination between different ministries and between national, provincial and local governments.

- Decentralization with increased subnational/local autonomy, without sufficient legislation and central coordination to secure adequate disease control measures.

- Weak health sector regulation and limited mechanisms and resources for enforcing existing regulation.

- Non-existent or weak policy on the role of the private health care sector, including limited information on the private sector and poor regulatory framework.

- Limited engagement with civil society in the design, operation and accountability of health systems

### Financing

- Limited general health sector budgets and caps on expansion of health resources.

- Unfair financing systems, e.g. little or no coverage of health insurance functions with the ability to pool and redistribute resources in a way that minimizes financial access barriers and financial burden for patients.
Weak mechanisms for tracking financial flows and poor capacity for national health accounting.

Weak mechanisms for strategic resource allocation and purchasing of services.

Health workforce

- Lack of basic information about the number, composition and geographical distribution of all health providers (public and private) and the type and quality of the services they provide.
- Insufficient coordination of human resource development across different parts of the health system and between different public health programmes, e.g. TB and AIDS programmes.
- Inadequate size and competence of the health workforce.
- Weak structure and poor quality of educational systems for health professionals, including continuing medical education and in-service training.
- Absent, unclear or non-performance-based career opportunities.
- Poor supervision and quality control mechanisms.
- Perverse incentives linked to employment policies, salary structure and payment mechanisms.

Medical products (including drugs and diagnostic facilities)

- Weak regulation of medical products and/or weak enforcement mechanisms
- Weak systems for procurement, distribution and management of drugs and equipment.
- Weak mechanism for promoting rational use of drugs.
### Information (including monitoring and evaluation)

- Poor quality of vital statistics and demographic information.
- Weak general systems for disease surveillance and poor disease notification system.
- Lack of data on patterns of health care utilization.
- Limited skills for analysing existing data at service and supervisory levels.
- Limited capacity for health systems research and operational research.

### Service delivery (including health-care provision and management/supervision of services)

- Lack of information and/or resources for improving and expanding health service infrastructure.
- Lack of integration of service delivery between different levels of the system and between different public health programmes.
- Lack of comprehensive policy and plan for optimal utilization of existing health providers.
- Limited capacity to plan and manage health-care provision, including contracting, certification and accreditation of public and private providers.
- Limited use of quality standards and evidence-based guidelines.
- Poor systems for referral and information exchange between providers (public and private).

#### 4.5.2 Insufficient resource mobilization

Financial access to care, including TB prevention, care and control in the Region is funded largely by out-of-pocket expenditure. This is direct spending by households for health services, without reimbursement of any kind and is considered the most regressive option for funding health systems – funding through general taxes, and social insurance being the most equitable forms
of health financing. Of all health expenditures in countries of the SEA Region, 66% are out-of-pocket, of which a substantial proportion is spent on the purchase of drugs. And, estimates suggest that as much as 30% of new poverty in some countries in the Region is caused by the catastrophic cost of accessing health care.

In decentralized health system, financing of TB prevention, care and control depends largely on funding allocation from central and local governments. In general, local budget and expenditure allocation for TB control is low due to large financial contribution from external sources and budget needs for other competing health programmes. Funds for TB prevention care and control services rely to a large extent on external funding. Low political commitment from local governments therefore is a serious threat for continuity of TB prevention, care and control services. Moreover, the recent funding cuts by the Global Fund (GF) have added to this concern.

4.5.3 Limited programme management capacity

Member States in the Region are facing the growing challenges of improving quality of existing services, expanding services to uncovered, often geographically challenging areas, and at the same time adding new services to the services already being provided e.g. PMDT. Staffing, whether clinical or managerial, is not increasing in numbers at a pace necessary to match the growing needs, and the frequent turnover makes the maintaining of competencies increasingly difficult. It is clear that implementation and expansion of all components of the Stop TB strategy requires substantial investments in the quantity and quality of management and supervisory staff at all levels.

Planning and budget allocations at local levels are not always based on need assessment and analysis of available data for TB prevention, care and control. Also, there is limited coordination among stakeholders in the planning process. Many countries also have large Global Fund grants managed by the NTP, as well as grants from other donors. Those grants require additional management capacity and close financial and programmatic oversight mechanisms at all levels, which often further compromises the inadequate managerial structures and systems.
Guiding principles

5.1 TB control as part of health system strengthening, based on primary health care principles

The inclusion of “Contribution to Health Systems Strengthening (HSS)” in the Stop TB strategy explicitly acknowledges that effective and sustainable TB control services rely on the general health system, especially on well-functioning primary health care (PHC). Weak health systems pose many barriers to effective TB control. TB control services are an important part of health systems, and TB programmes are contributing substantially to HSS through investments in laboratory infrastructure, human resource development, as well as through developing innovative service delivery strategies such as the practical approach to lung health (PAL), public–private and private–private mix
(PPM), as well as community-based DOTS in response to specific health systems barriers. NTPs can further contribute to strengthening of the general health system by promoting and engaging in:

- harmonization of TB control planning and budgeting process with sector-wide planning frameworks;
- optimization of the management of human resources for health;
- reduction of duplicative structures and systems;
- promotion of collaboration and coordination with other programmes and interventions for service delivery aiming at universal access to quality care.

5.2 Fostering partnerships at all levels

Without partnerships there is no TB control. TB partners are every person or group, public or private, who has awareness, willingness, ability and high commitment to support and contribute towards TB control in their own capacity and potential. Partnership is an arrangement where parties agree to cooperate to advance their mutual interests. Partnership means a formal agreement between two or more parties that have agreed to work together in the pursuit of a common goal.

It is essential for TB control to reach out with partnerships across different health sectors and foster a more holistic approach towards health, as all aspects of health, including stigma, are interrelated. Every partner needs to share the same understanding of the purpose of the partnership, i.e. successful acceleration of TB control in an effective, efficient and continuous manner, and all players as equal partners, regardless of who they are.

5.3 Promote ethical values and human rights principles

Governments have an ethical obligation to ensure universal access to TB care. Therefore, a comprehensive TB strategy should seek to protect individuals and communities through the proper treatment of infected individuals (active and latent) and the prevention of new infections (through the existence of an effective care and control programme as well as through measures such as infection control, vaccination, population screening, and improvement in the socioeconomic factors known to increase the risk of TB). Pursuing these
goals requires coordinated action to provide the conditions for all members of the community to be protected from harm through the provision of adequate public health care. Key values include, but are not limited to: social justice/equity, solidarity, common good, participation, autonomy, effectiveness, transparency and accountability.\textsuperscript{8}

\textsuperscript{8} Guidance on ethics of tuberculosis prevention, care and control, World Health Organization, Geneva 2010 (WHO/HTM/TB/2010.16)
Vision, goal and objectives

6.1 Vision and goal

The vision for TB control in the SEA Region is to eliminate TB as a public health problem [Regional Committee resolution SEA/RC60/R5 (2997)], defined as an incidence rate of active TB of less than one case per 1 million population per year.

The overall goal for TB control in the SEA Region is to reduce morbidity, mortality and transmission of TB until it is no longer a public health problem.

6.2 Objectives

The overall objectives of the plan are in line with the objectives of the Global Plan to Stop TB 2011-2015:

- 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.
Strategies and interventions

The strategies and interventions to reach the overall goal, vision, objectives and targets for TB control are grouped under the following five key strategies:

1. Ensure universal access to quality TB diagnosis and treatment services for all persons with TB including children.
2. Scale up the programmatic management of drug-resistant TB.
3. Scale up TB–HIV collaborative activities.
4. Strengthen laboratory capacity.
5. Contribute to health system strengthening.
7.1 Ensure universal access to quality-assured diagnosis and treatment for all persons with TB

The first strategy focuses on intensified and early detection of all cases of TB. Countries in the Region need to continue and intensify efforts to strengthen the capacity of the public health system to provide high-quality services for early and intensified case notification. This includes efforts to improve the quality and capacity of health workers to provide quality care. Diagnosis and treatment should be easily accessible with no, or minimal financial or geographical barriers to care. Access to services needs to be improved through strengthening and expansion of basic primary health-care services, especially for hard-to-reach populations. Particular efforts including outreach activities and selective active case-finding are needed to detect TB earlier in groups that are disproportionately affected. These may include pregnant women and young children, the urban poor, contacts of TB cases, migrants, prisoners, alcohol users, drug users, displaced people, smokers and people with diabetes. Ensuring that private providers, whether individuals or hospitals provide quality TB care, based on national guidelines, is a major challenge in the Region. Dissemination and implementation of the International Standards for Tuberculosis Care need to be intensified. Figure 13 provides a framework for analysis and systematic actions to improve early case detection.9 Countries need to use this framework to analyse the local situation and develop interventions tailored to each country’s unique situation. The framework was endorsed by the SEAR Technical Working Group on Tuberculosis (TWG-TB) at its fourth meeting in April 2012.

7.1.1 Improve community knowledge and awareness of TB

Ensuring high awareness in communities about health in general and of TB and TB prevention, care and control services in particular can help to ensure that people recognize TB symptoms and take appropriate action early to seek care from appropriate health facilities. People need to believe that the available general health services offer something valuable at an affordable cost, and be assured that such services do not come at a social cost caused by stigma associated with the disease and/or the services being offered. People also need to see that services are based on key values such as social justice/equity, solidarity, common good, participation, autonomy, effectiveness, transparency and accountability.

Any strategy to influence the demand side should be based on a good understanding of local knowledge and attitudes towards health and health care in the community. Therefore, actively engaging community members and civil society is essential to plan and execute effective strategies and interventions. A powerful way to increase utilization is to ensure that high-quality, accessible and affordable services are in place.

Peoples’ health-seeking behaviours are largely influenced by the experiences and attitudes of family, the local community and peers. Ensuring client satisfaction is the key to increasing utilization of available TB prevention, care and control services. Cured TB patients are effective advocates and can be actively involved in increasing awareness in the community, and also be formally engaged in identifying and referring people with TB symptoms.

The *Regional Framework for Advocacy, Communication and Social Mobilization (ACSM)*\(^\text{10}\) developed by WHO-SEARO provides further details on ACSM strategies and interventions adapted to the regional context.

**Figure 13: Framework for analysis and systematic actions to improve early case detection**

*The patient-initiated pathway*

*The screening pathway*

\(^{10}\) *Regional Framework for Advocacy, Communication and Social Mobilization (SEA-TB-333)*
7.1.2 Minimize barriers to health care

The basic principle for NTPs is to provide all essential diagnostic tests, as well as the full treatment course, free of charge to patients and without consultation fees. NTPs should also aim to decentralize delivery of services and simplify diagnosis and treatment procedures to ensure access, and minimize direct and indirect costs for patients and their families. Enablers for accessing health care, such as conditional or unconditional financial or food transfer, should be considered. Some of these actions can be pursued by NTPs alone. However, many of these activities require collaboration with actors engaged in general health system strengthening as well as with nongovernmental organizations, the private sector, civil society and communities engaged in improving health services for poor and vulnerable populations. These improvements include better training and supportive supervision for health workers to improve patient centered attitudes and approaches.

The poorest of the poor and those living in geographically inaccessible areas, conflict zones and urban slums without basic health-care infrastructure often have poor access to quality-assured diagnostic and treatment services. Disempowered, poorly educated, marginalized, informal or illegal residents and internally displaced people may have greater difficulties in both accessing care and fully availing themselves of such services, even if they can reach the appropriate facility. Women face special access barriers in many settings, related to, among other things, disempowerment, stigma and lack of financial resources. Interventions include enablers targeting specific vulnerable groups and targeted outreach activities combining health information with mobile diagnostic services for vulnerable populations. Such outreach activities can also be organized jointly with other health-care programmes such as EPI and maternal care.

Many poor people turn to formal or informal private health-care providers that are not linked with the NTP, or depend on self-treatment, and delay utilization of formal health-care services. Engaging with and improving TB diagnosis and referral mechanisms across all public and private health-care providers, including nongovernmental organizations and civil society can contribute in a major way to early and increased case detection. The dissemination and implementation of the International Standards for Tuberculosis Care (ISTC) can further strengthen public–public, public–private and private–private interventions.
7.1.3 **Strengthen identification of people suspected of having TB**

All health staff in all parts of the health system should be alert to and know how to ask patients about TB symptoms and refer them for TB diagnostic testing as per guidelines. This entails training (pre-service and in-service), supervision of and support to all health-care providers, public and private. (See also Section 7.5.3 below).

Actively asking all outpatients in primary health-care facilities and hospitals about cough (including those who do not mention cough spontaneously) can yield identification of a substantial additional number of cases. Expanding implementation of such screening practices can also mean involving non-health-care staff as symptom surveyors; such staff may include clerks managing registrations in the outpatient department, who may ask a simple question about cough to all attendees and send eligible patients directly for a diagnostic test.

All people living with HIV should be screened for TB. All adults and adolescents living with HIV who have any of the following symptoms (current cough, fever, night sweats, or weight loss) should be carefully evaluated for TB and other diseases. Children living with HIV who have any one of the following symptoms (poor weight gain, fever, current cough or contact history with a TB case) should also be evaluated for TB.

The Practical Approach to Lung Health (PAL) aims to improve the quality of management of respiratory patients, and to ensure coordination among different levels of health care and between TB control programmes and general health: implementation of this approach can improve the technical capacities of primary health-care workers to manage respiratory patients, including people with suspected TB.

The risk of TB is increased among people with tobacco smoking-related conditions, diabetes, malnutrition, alcohol use, and a wide range of other conditions that impair peoples’ defense mechanism against TB infection and disease, such as silicosis, malignancies, various systemic immunosuppressant conditions and treatment with immunosuppressant medicines. People with previous episodes of TB are at higher risk than the general population of developing a subsequent episode of active TB. It is a relevant part of
individual clinical management of these conditions to systematically ask for TB symptoms, at least in high TB burden settings. Testing all people in a particular risk group (contacts, clinical, institutional, occupational, residential, demographic and socioeconomic risk group) for TB is an approach that is part of the screening pathway (Figure 13-Page 40). This type of screening needs prioritization based on feasibility and capacity of the health system and other stakeholders to implement screening activities.

7.1.4 Ensure quality-assured diagnosis

Sputum smear microscopy should be used as an initial diagnostic tool for pulmonary TB, except among people living with HIV. The test identifies those individuals who are most infectious, at a low cost to health services. Optimal quality of sputum smear microscopy should be ensured through internal quality control (IQC) and external quality assessment (EQA) systems. The definition of smear-positive TB has been changed so that one positive sputum smear is now sufficient with positivity defined as at least one bacillus per smear. Only two sputum specimens are required and they may be performed on the same day, providing that AFB (acid-fast bacilli) microscopy is quality-assured through EQA systems. This can help to reduce the risk of defaulting during the diagnostic process, as well as the indirect costs of diagnosis to patients.

Good access to quality-assured chest X-ray diagnosis combined with effective communication strategies that minimize drop-out during the diagnostic phase can improve early case detection of sputum smear-negative cases. TB diagnosis should be expedited in people living with HIV by using all available investigations, including Xpert MTB/RIF as the first diagnostic test, if available, culture and chest X-ray. Culture or Xpert MTB/RIF as a follow-on test for HIV-negative individuals with either a negative sputum smear and/or a positive chest X-ray can dramatically improve detection of pulmonary TB.

Existing diagnostic tests for TB in children have shortcomings, and the full range of tests (including bacteriological culture and tuberculin skin testing) is often not available in settings where the vast majority of paediatric TB cases occur. Challenges for diagnosis of extrapulmonary TB include shortcomings in several diagnostic tests and clinical assessments across many medical specialities. Improved diagnostic algorithms, as well as improved diagnostic capacity, infrastructure and training, are required to ensure effective and early diagnosis.
Wide implementation of quality-assured culture services can help increase bacteriologically-confirmed case detection. It can also be used to provide feedback on diagnostic accuracy to the diagnosing physician. However, the method is expensive and requires an advanced laboratory network. Conventional culture also takes a long time (up to eight weeks). Liquid culture increases the case yield by 10% over solid media, and automated systems reduce the diagnostic delay to days rather than weeks. Liquid systems are, however, more prone to contamination, and the manipulation of large volumes of infectious material mandates appropriate and adequate biosafety measures.

TB diagnosis would be considerably simplified with the availability of new, sensitive, specific and cost-effective diagnostic tools that are also applicable at point-of-care in field conditions in resource-poor settings. Xpert MTB/RIF and other new tests in the pipeline have the potential to become point-of-care tools suitable for widespread use, provided that challenges with implementation can be overcome and that costs are sufficiently low. However, currently the test is recommended by WHO for use at the intermediate laboratory level. Xpert MTB/RIF has the advantage of detecting TB in a very short time (less than two hours). Another advantage is that it performs equally well among HIV-negative and HIV-positive individuals. It is therefore a useful tool to improve early case detection of MDR-TB and HIV-associated TB. AFB microscopy and culture remain essential tools for monitoring patients’ response to therapy. Conventional drug susceptibility testing of second-line anti TB medicines remains an important tool to determine additional drug resistance among rifampicin-resistant strains (see also Section 7.4 below).

7.1.5 Improve referral and notification practices

People with TB symptoms utilize a wide range of public and private providers. In many high TB burden countries, the first point of contact for the majority of people with TB, including poor people, is a private provider (private doctors and hospitals, private pharmacies or informal private providers). These providers are often disengaged from formal national TB control efforts. They may not follow national guidelines for diagnosis and treatment, and often do not notify TB cases to the NTP. A similar problem exists in parts of the public health-care sector, especially in the hospital sector. TB diagnosis and management under the NTP is normally integrated into primary health care, although some countries provide TB services mainly through specialized,
independent TB facilities. Public hospitals, medical colleges, special health insurance-affiliated health facilities, and health facilities belonging to special health services of the armed forces, prison system and police service, etc., are often not fully linked to the NTP. All public and private providers that are consulted by people with TB symptoms, and who diagnose and/or treat TB, should be engaged in national TB control efforts in order to ensure early diagnosis, appropriate treatment and full notification of all TB cases. Countries should endorse and implement mandatory notification for all care providers diagnosing TB.

### 7.2 Scale up the programmatic management of drug-resistant TB

The second strategy focuses on interventions to rapidly scale up PMDT in the Region. There is an urgent need for increased efforts to scale up the PMDT as currently about 4 000 out of an estimated 105 000 MDR-TB cases in the Region are notified and put on treatment annually. A response plan to address the MDR-TB challenges has been developed by the Region: *South-East Asia Regional Response Plan for Drug-resistant TB Care and Control 2011–2015*.\(^{11}\)

The plan provides an overview of planned regional response to M/XDR TB and draws a roadmap for regional contribution to achievement of global targets set forth for M/XDR TB in Global Plan 2011-2015. The response plan was endorsed by the SEAR Technical Working Group on Tuberculosis (TWG-TB) at its fourth meeting in April 2012. As the Regional Response Plan for Drug-resistant TB Care and Control is a freestanding document, interventions listed under each of the eight strategic areas overlap with the five broader strategies listed in the comprehensive Regional Strategic Plan for TB Control.

The strategies in the regional response plan are outlined below:

1. Preventing the emergence of resistance through sustained and enhanced efforts to reach all TB patients with quality care.
2. Scaling up PMDT.
3. Implementing TB-IC in health-care facilities and congregate settings.

\(^{11}\) The *South East Asia Regional Response Plan for Drug-Resistant TB Care and Control 2011-2015* (SEA-TB-334)
(4) Strengthening surveillance, including recording and reporting of drug-resistant TB.

(5) Strengthening health systems to ensure capacity for PMDT integrated into primary health care.

(6) Forging partnerships and ensuring coordination with stakeholders to mobilize the requisite resources.

(7) Supporting PMDT through ACSM.

(8) Undertaking research.

This section summarizes the strategies and interventions as outlined in the *South-East Asia Regional Response Plan for Drug-resistant TB Care and Control 2011–2015*.

### 7.2.1 Preventing the emergence of resistance through sustained and enhanced efforts to reach all TB patients with quality care

The main interventions under this strategic component include:

- strengthening basic TB control services to improve case notification and promoting early case detection;
- promoting adoption of International Standards of Tuberculosis Care by all care providers;
- promoting rational use of drugs and pharmacovigilance;
- strengthening TB-HIV collaboration.

### 7.2.2 Scaling up the programmatic management of drug-resistant TB

The interventions under this strategic component include:

- screening and testing for resistance to first-and second-line antiTB medicines, as well as HIV testing among confirmed cases of MDR-TB;
- access to effective treatment for drug-resistant TB.
7.2.3 Implementing TB-infection control in health-care facilities and congregate settings

The interventions under this strategic component include:

- advocacy for awareness at all levels of the importance to address TB-IC;
- implementation of administrative, personal protection and environmental measures for TB-IC following assessments of the current situation;
- periodic TB screening for staff of health facilities and monitoring of trends.

7.2.4 Strengthening surveillance, including recording and reporting of drug-resistant TB

The interventions under this strategic component include:

- surveillance of drug resistance (DRS) through routine testing of patients and/or surveys;
- development and implementation of electronic tools, associated guidelines and standard operating procedures;
- capacity building to strengthen monitoring and evaluation.

7.2.5 Strengthening health systems to ensure capacity for PMDT integrated into primary health care

The interventions under this strategic component include:

- integration of PMDT into the existing systems and structures of the NTP;
- development and implementation of an HRD plan;
- strengthened coordination with other health-care programmes and partners.
7.2.6 Forging partnerships and ensuring coordination with stakeholders to mobilize the requisite resources

The interventions under this strategic component include:

- involving all health-care providers in MDR-TB response;
- strengthening partnerships with various stakeholders to support the PMDT scale-up.

7.2.7 Supporting PMDT through advocacy, communication and social mobilization

The interventions under this strategic component include:

- advocacy activities to place MDR-TB high on the political and development agenda;
- communication activities to generate awareness about TB and MDR-TB and the services available for its detection and treatment;
- social mobilization activities to bring together stakeholders to raise awareness and create demand for services.

7.2.8 Undertaking research

The interventions under this strategic component include:

- capacity building to conduct operational research;
- networking between research institutions and other relevant agencies.

7.3 Scale up TB-HIV collaborative activities

The third strategy focuses on interventions to scale up TB-HIV collaborative activities in the Region. While the collaboration between TB and HIV control programmes has improved, it needs to be strengthened in all Member States to ensure universal HIV counselling and testing for all TB patients, the availability of cotrimoxazole preventive therapy and ART for all eligible TB patients coinfected with HIV as well as INH prophylaxis, and air-borne infection control in health-care facilities. A regional response plan for TB-HIV
is under development to reflect global policy in the context of the Region; to provide additional guidance for prioritization of activities and to reflect lessons learned in TB/HIV since original policy developed in 2003-2004 and 2012. The interventions listed below will be further elaborated. Mobilization of HIV groups and affected communities to advocate for the provision of TB prevention, treatment and care services to all people living with HIV will be crucial for the successful implementation of the listed interventions.

7.3.1 Scale up access to HIV testing among TB patients

Countries need to institute national policies for HIV testing in people with active TB or those suspected of having TB (if these do not yet exist), and ensure that training for health workers on HIV testing and counselling is provided.

7.3.2 Scale up access to CPT for HIV-positive patients according to international guidelines

By 2015, all HIV-positive TB patients should be treated with CPT.

7.3.3 Scale up access to ART for HIV-positive patients according to international guidelines

Provision of ART needs to be expanded, such that by 2015 all HIV-positive TB patients are enrolled on ART. National policies need to be updated so that all HIV-positive TB patients are eligible for ART and to ensure that access to TB and HIV services is promoted among the populations that are most at-risk.

7.3.4 Scale up TB screening among people living with HIV, according to international guidelines

By 2015, 100% people receiving HIV care should be periodically screened for TB using a symptom-based clinical algorithm.

7.3.5 Scale up access to IPT among people living with HIV and who do not have active TB according to international guidelines

All those who are screened for TB and do not have active TB are eligible for IPT. By 2015, all those who are in HIV care and without active TB should be offered IPT.
7.3.6 **Scale up the implementation of measures for TB infection control in health-care facilities providing services to people living with HIV.**

People living with HIV are at a higher risk of developing TB. In health-care facilities where people living with HIV are receiving care, a high priority is to prevent the transmission of TB. The scale and efficacy of TB infection control measures in health-care facilities providing services to people living with HIV can be assessed according to the ratio of new TB cases per 100 000 health-care workers to the notification rate of TB in the general population: the ratio should be around one. Measures to reduce the spread of TB in health-care settings should include annual surveillance for TB disease among health-care workers, and implementation of an infection control plan.

7.3.7 **Scale up implementation of interlinked patient monitoring systems for TB/HIV and recording of TB deaths among people living with HIV**

Development of interlinked monitoring systems is critical to measurement of progress and strategic planning. All countries that have been identified as priorities for TB/HIV level should be reporting TB deaths among people living with HIV by 2015.

7.4 **Strengthen laboratory capacity**

The fourth strategy focuses on interventions to substantially improve the availability and quality of laboratory services to diagnose TB and monitor the treatment of TB. Interventions have been defined such that they relate very clearly to the other elements of the regional plan. Laboratory diagnosis of TB through microscopic examination of sputum for the presence of acid-fast bacilli (AFB) has been the cornerstone of the diagnostic process for people suspected of having TB. Ensuring the availability of laboratories in which a reliable diagnosis of TB can be made through quality-assured AFB microscopy is essential for effective TB control. This requires strengthening of basic laboratory services in many countries. This will benefit not only TB control, but will also help to strengthen health systems as a whole.

AFB microscopy alone, however, is insufficient for the diagnosis of all people with TB. It will not identify people who have smear negative forms
of TB and it cannot be used to detect drug-resistant forms of TB. Smear-negative pulmonary TB is especially common among people who are HIV positive. To diagnose these cases, sputum specimens can be cultured (grown) in laboratories, after which it is possible to diagnose or rule out TB. In the past, cultures were grown on solid media and it took four–eight weeks to obtain a result. More recently, liquid culture and molecular technologies have been recommended to enable a substantial reduction in diagnostic delays. Diagnosis of drug-resistant TB involves identifying *Mycobacterium tuberculosis* from clinical specimens and conducting drug susceptibility testing (DST) to confirm or exclude resistance. Recently, rapid tests for drug resistance have become available e.g. Xpert MTB/RIF (also see Section 7.1.4).

The SEAR Technical Working Group on Tuberculosis (TWG-TB) at its fourth meeting in April 2012, recognized the utility of the Xpert MTB/RIF and welcomed the efforts for rapid implementation of this innovative technology as well as the development of other new diagnostic tools. The group acknowledged the challenges regarding the implementation of the Xpert MTB/RIF, in particular at what level in the health system the machine should be made available as well as for the cost of the machine, cartridges, reagents and maintenance. The group noted the concerns to ensure the availability of adequate treatment capacity, especially when the Xpert MTB/RIF diagnostic test is used with the prime purpose of diagnosing TB in people living with HIV/AIDS in HIV settings, and other settings where PMDT services are not yet established. There is a need for continued operational research as new technologies are rolled out.

To ensure that laboratory capacity is adequate several essential elements must be addressed simultaneously within comprehensive strategies and national laboratory strengthening plans. Fundamental to this work is collaboration between TB control programmes and public health laboratory systems at country level, in the following areas:

- infrastructure, biosafety and utilities;
- human resource development (including training and retention);
- specimen referral, supply chain management and logistics;
- equipment and maintenance;
- technical procedures (disease-specific);
quality assurance; and
data management.

7.4.1 Increase access to quality-assured AFB microscopy with effective external quality assurance (EQA)

Member States need to maintain and further strengthen the existing laboratory networks with more laboratories where needed to support interventions for increased and earlier case finding. By the end of 2015, all countries in the Region should have at least one laboratory per 100,000 population able to perform AFB microscopy with effective EQA. More than 90% of AFB laboratories assessed for quality assurance should meet international standards. In recognition of the new technologies now available, 20% AFB laboratories should have replaced conventional bright field microscopes with light-emitting diode (LED) microscopes. These LED microscopes enable enhanced diagnostic accuracy (and increased detection of smear-positive cases of TB) by allowing laboratory staff to visualize TB bacilli much more easily.

7.4.2 Improve the diagnosis of TB among AFB smear-negative TB cases, especially among people living with HIV

Countries should improve the diagnosis of smear-negative cases by using culture and/or molecular-based tests. By 2015, countries that are in one or both lists of the 22 high-burden and the 27 high MDR-TB burden countries should have at least one culture laboratory per 5 million population, or equivalent capacity to diagnose smear-negative TB using rapid molecular tests.

7.4.3 Increase access to rapid laboratory diagnosis of drug-resistant TB among TB patients considered at risk of M/XDR-TB

Laboratory capacity to test for first-and second-line drug resistance should be expanded; by 2015, all patients that have been previously treated for TB should be tested for MDR-TB. Furthermore, any new TB cases (i.e. that have not had TB in the past) should also be tested for MDR-TB, if they are considered at high risk (for example, they are a contact of a known case of MDR-TB, or they were diagnosed in a setting where the prevalence of MDR-TB is known to be high). In recognition of the availability of rapid tests, more than 50% tests for drug resistance among new TB patients and more than
90% tests among previously treated patients should be done using rapid tests by 2015. Among confirmed cases of MDR-TB, at least 90% should have a DST test result for a fluoroquinolone and a second-line injectable drug.

### 7.4.4 Establish laboratory quality management systems

By 2015, more than half of all national reference laboratories (NRLs) should be implementing a quality management system that meets international standards, at least 95% should have appropriate biosafety measures in place and ideally half should have an accredited quality management system in place.

### 7.5 Contribute to health system strengthening

The fifth strategy focuses on interventions contributing to strengthen the health systems to ensure equitable access to quality TB prevention care and control services.

Many of the health system weaknesses listed in Box 3 in section 3.5.1 are beyond the direct influence of NTPs; they are determined by broader public health policy and by political and economic trends at local, national and international levels. Nevertheless, NTPs need to plan and implement realistic strategies within the limits set by such policies and practice. The NTPs should also seek to become more proactively involved in processes aimed at improving the general health system.

#### 7.5.1 Ensure adequate health financing

Health systems should raise and secure enough funds for health in order to ensure that people can use the services they need, including TB prevention, care and control services, and are protected from financial catastrophe or impoverishment because they have to pay for services. Countries should:

- plan the transition to universal coverage in ways that contribute to: meeting the needs of the population for quality care; reducing poverty; attaining internationally agreed development goals including the MDGs.
- ensure adequate and equitable distribution of quality health-care infrastructures and HRH so that those insured receive equitable quality care services according to their benefit packages.
Ensure that external funds for specific health programmes or activities are managed and organized in a way that contributes to the development of sustainable financing mechanisms for the health system as a whole.

Promote health financing systems that include a government-managed social security system that reduces out-of-pocket expenditure by patients.

### 7.5.2 Strengthen programme management capacity

The limited leadership and programme management capacity is a constant, especially at operational levels in both public and private health sectors. With the implementation of the Stop TB strategy, managers at all levels are facing complex managerial decisions and interventions. To enable an adequate response to those challenges, competencies, roles and responsibilities should be clearly defined and performance changes measured. Countries need to ensure:

- adequate numbers and deployment of managers throughout the health system;
- managers have appropriate competencies
- functional critical support systems (to manage money, staff, information and supplies, etc.)
- the creation of an enabling working environment.

For NTPs this means that there is TB management capacity with competencies in policy and planning, budgeting and logistics (including drug and supplies procurement and distribution), monitoring and surveillance and laboratory supervision. As a minimum there should be:

- one dedicated senior staff member with overall responsibility for TB control within the country (the “Programme Manager”). This person is backed up by a central-level team (in adequate numbers) with sufficient planning, management and technical capacity for guiding and supporting TB control implementation in the country.
- dedicated staff to ensure uninterrupted and timely supply of anti TB drugs. Job responsibilities include estimation of need, ensuring
timely procurement, preparing distribution lists, and tracking stock and flow.

- dedicated staff to manage the TB control information system, including collation of case-finding and treatment reports, and national-level quarterly treatment cohort analysis.

- A national unit with sufficient operational budget (apart from salaries and other fixed overheads), and a line-item in the health budget, such that it is able to carry out planning and reporting functions, essential supervisory and training programmes, and rapid response during a crisis, e.g. drug stock-out in a province.

- full- or part-time dedicated and well-defined TB supervision capacity at the provincial/district level. The TB coordinator is supported with adequate financial and physical resources (full access to transport and communications, etc.).

### 7.5.3 Strengthen human resource development

Effective tuberculosis (TB) control including the scaling up of multi/extensively drug-resistant tuberculosis (M/XDR-TB) control depends on timely, adequate, and ongoing hiring, training, deployment, motivation and management of health workers to ensure that all components of the Stop TB Strategy can be implemented in the context of national guidelines to reach the TB-related Millennium Development Goals (MDGs).

TB control services are provided within the framework of national health systems and the dire shortage of health workers in many places is among the most significant constraints to achieving all health-related Millennium Development Goals. This shortage leads to, among other things, an inability of health systems to provide high-quality diagnostic and treatment services for TB sensitive to first-line drugs, not to mention scaling up services to diagnose and treat M/XDR-TB. The small number of MDR-TB cases diagnosed compared with the number of cases that are estimated, is intimately linked to this lack of adequately trained, motivated and supported health workers including staff in the laboratory system.

Countries should develop strategic plans for HRD in collaboration and coordination with departments of ministries of health responsible for overall human resources for health (HRH). Such plans should be based on the Human
Resources for Health (HRH) Action Framework (Figure 14), designed to assist countries in developing and implementing strategies to achieve an effective and sustainable health workforce and should cover the areas of intervention listed in Table 3.

**Figure 14: The HRH Action Framework**


**Table 3: The HRH Action Framework: action field, definition, and areas of intervention**

<table>
<thead>
<tr>
<th>Action field</th>
<th>Definition</th>
<th>Areas of intervention</th>
</tr>
</thead>
</table>
| **Policy**   | Legislation, regulation and guidelines for conditions of employment, work standards, and development of the health workforce | • Professional standards, licensing and accreditation.  
• Authorized scopes of practice for health cadres.  
• Political, social and financial decisions and choices that impact HRH.  
• Employment law and rules for civil service and other employers. |
<table>
<thead>
<tr>
<th>Action field</th>
<th>Definition</th>
<th>Areas of intervention</th>
</tr>
</thead>
</table>
| Finance      | Obtaining, allocating and distributing adequate funding for human resources | • Salaries and allowances.  
• Budget for HRH.  
• National health accounts with HRH.  
• Mobilizing financial resources (e.g. government, Global Fund, PEPFAR, other donors). |
| Education    | Development and maintenance of a skilled workforce | • Development and standardization of training material.  
• Pre-service education tied to health needs.  
• In-service training including continuing education.  
• Capacity of training institutions.  
• Training of community health workers and non-formal care providers. |
| Partnerships | Formal and informal linkages aligning key stakeholders (e.g. service providers, priority disease control programmes, consumer/patient organizations) to maximize use of human resources for health | • Agreements in place between MoH and other health providers to supplement the delivery of health services.  
• Mechanisms in place to mobilize community support for health services.  
• Mechanisms in place for coordination of donors and other stakeholders.  
• Linkages with research and training institutions. |
| Leadership   | Capacity to provide direction, align people, mobilize resources and reach goals | • Identification, selection and support of HRH champions and advocates.  
• Leadership development for HRH managers at all levels.  
• Capacity for multi-sector and sector-wide collaboration.  
• Modernizing and strengthening professional associations. |
**Action field** | **Definition** | **Areas of intervention**
---|---|---
**Human resource management** | Integrated use of data, policy and practice to plan for necessary staff, recruit, hire, deploy, develop and support health workers | - Personnel systems: workforce planning (including staffing norms), recruitment, hiring and deployment.
- Work environment and conditions: employee relations, workplace safety, job satisfaction and career development.
- HR information system integration of data sources to ensure timely availability of accurate data required for planning, training, appraising and supporting the workforce.
- Performance management: performance appraisal, supportive supervision and productivity.
- Staff retention: financial and non-financial incentives.

*Source: The HRH Action Framework (available at: http://www.who.int/hrh/tools/en/;*  

### 7.5.4 **Strengthen government stewardship**

Ensuring universal access and coverage is the ultimate expression of a government’s commitment, its duty towards all of its citizens and the ultimate expression of fairness. Aiming for universal coverage and ensuring financial protection is fundamental to reaching the goal and targets of TB programmes.

Introduction, strict enforcement and monitoring of existing and new policies such as vital registration, mandatory TB case notification by all care providers, accreditation frameworks including standards for TB care and rational use of anti TB medicines are essential. Such policies must be backed up by adequate investments in human and financial resources. Ensuring access to quality care for TB prevention, care and control may require engaging health facilities and providers within and beyond the scope of the public health sector. Working with prisons, military social security organizations and workplaces, etc. to make quality TB services a part of the health services they offer requires constant coordination with differed ministries. Working with private, corporate and voluntary sectors also requires collaborative and regulatory initiatives backed by explicit policies, guidance and human and financial resources.
TB programmes should actively promote and participate in efforts to address poverty, improve nutrition standards and enhance living and working conditions of people affected with and vulnerable to TB. At community level, the TB programme should help abolish socioeconomic barriers and catastrophic health and social costs by linking people affected by TB to available social welfare schemes and if required, propose new schemes for their benefit.

7.5.5 Strengthen management of anti TB medicines

Successful achievement of TB-related targets is dependent on effective logistic systems to ensure continuous supply of both first-line and second-line anti TB medicines as well as other supplies. Management of first-line anti TB medicines has improved considerably in countries of the Region in the past few years. No stock-outs were reported from any country at the point of treatment delivery in the past year. All countries in the Region successfully transitioned from grants to direct procurements in 2009 for first-line anti TB medicines (adult formulation). Eight of the 11 Member States receive GDF grant for paediatric formulations of first-line medicines.

However, despite progress, Member States need to strengthen collaboration with national drug regulatory authorities in establishing and enforcing quality control and quality monitoring systems and adherence to common quality assurance standards for TB medicines and supplies procured with funding from all sources. With anti TB medicines readily available over the counter, and often without prescription, additional work is needed in all countries to ensure the rational use of anti TB medicines, and to establish mechanisms for pharmacovigilance.

Pharmacovigilance is defined by WHO as “the science and activities relating to the detection, assessment, understanding and prevention of adverse effects or any other possible drug-related problems”. It involves strengthening of technical and regulatory requirements, along with bringing about a change in the behaviour of prescribers and users. This would be another key area in preventing the emergence of resistance. Countries would need to undertake situational analysis that involves the evaluation of prescription policies in health-care settings in public and private sectors, and the utilization of antimicrobial agents at various levels; they would need to assess the therapeutic and non-therapeutic use in animals and appraise the
impact of the promotion of pharmaceuticals. Countries need to promote optimal prescription through:

- the development of standard national guidelines advocating evidence-based therapy in conformity with international standards of best practice.
- training professionals in the use of these guidelines and regimen.
- preventing over-the-counter (OTC) availability of TB drugs.
- ensuring the availability of treatment guidelines and information to all prescribers.
- implementing the drug-use feedback form and monitoring the efficacy and side-effects of drugs.
- ensuring that only quality-assured drugs are prescribed.

The resolution WHA62.15 adopted at the Sixty-second World Health Assembly in 2009 urges Member States to take action related to drug quality assurance and regulation by means of “ensuring uninterrupted supply of first- and second-line medicines for tuberculosis treatment, which meet WHO prequalification standards or strict national regulatory authority standards, and that quality-assured fixed-dose combinations of proven bioavailability are prioritized within a system that promotes treatment adherence”. It also urges action for “strengthening mechanisms to ensure that tuberculosis medicines are sold on prescription only and that those are prescribed and dispensed by accredited public and private providers”.

7.5.6 Monitoring, evaluation and operational research

Monitoring and evaluation are essential to document progress and to show whether TB control is having the expected impact on the burden of disease. By 2015, all countries should be reporting treatment outcomes for all cases (not just those with smear-positive pulmonary TB, which was the original emphasis in recording and reporting when the DOTS strategy was launched in the mid-1990s). This should be done using electronic systems for recording and reporting of data wherever possible. Following the recommendations agreed
to by the WHO Global Task Force on TB Impact Measurement, systematic assessments of the quality and coverage of notification and vital registration (VR) data should to be undertaken on a regular basis, using the framework and associated tools developed by the Task Force; vital registration systems need to be developed or strengthened and surveys of the prevalence of TB disease are needed in selected countries. Prevalence of TB risk factors and co-morbidities should also be monitored, as well as indicators of implementation of actions to address them.

Programme-based operational research (defined as research specifically aimed at developing interventions that result in improved policy-making, better design and implementation of health systems, as well as more efficient methods of service delivery), is necessary to optimize TB control and determine the best ways of implementing and monitoring interventions. Operational research is crucial to determining how access to accurate diagnosis and effective treatment of TB can be increased, and how to adapt the Stop TB strategy to address the challenges posed by drug resistance and HIV infection in each specific country situation. Financial and technical support is required to enhance in-country capacity for operational research, and national plans for TB control should include budgeted activities for operational research as a routine part of programme activities. These include: (i) situation analyses and studies to assess the nature and extent of a health or service delivery problem; and (ii) studies to evaluate the ongoing or novel health interventions or programme performance e.g.; (iii) studies to test the effectiveness of specifically designed service delivery interventions; and (iv) descriptive studies to evaluate the impact and cost-effectiveness of new interventions.
The targets and indicators overleaf are based on the Global Plan to Stop TB 2011-2015.

Additional indicators for the scale-up of PMDT and for TB–HIV are found in the respective detailed regional plans.
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Baseline (2010)</th>
<th>Target 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Percentage reduction in regional TB mortality relative to the 1990 baseline</td>
<td>39%</td>
<td>50%</td>
</tr>
<tr>
<td>2. Number of TB cases diagnosed and notified (with age breakdown to ensure monitoring of paediatric TB)</td>
<td>3.5 million (118/100 000)</td>
<td>3.5 million</td>
</tr>
<tr>
<td>3. Number of cases of MDR-TB diagnosed</td>
<td>3937</td>
<td>15,000</td>
</tr>
<tr>
<td>4. % of annual funding needs financed from domestic resources</td>
<td>Average: 42% (2011)</td>
<td>≥70%</td>
</tr>
<tr>
<td></td>
<td>Range: 4-81% (2011)</td>
<td></td>
</tr>
<tr>
<td>5. Number of countries with ≥1 AFB microscopy laboratory per 100 000 population</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>6. Number of countries among the 5HBC and 4 high MDR-TB burden countries with ≥1 culture laboratory per 5 million population</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>7. Proportion of notified cases reported from non–NTP care providers (in selected countries depending on the country situation)</td>
<td>&lt;5%</td>
<td>15-20%</td>
</tr>
<tr>
<td>8. Treatment success rate among notified cases of smear-positive pulmonary TB</td>
<td>88% (2009)</td>
<td>&gt;90%</td>
</tr>
<tr>
<td>9. Number of countries in the Region that have successfully completed a national survey of prevalence of TB disease between 2008 and 2015 among the 21 countries globally where such a survey is strongly recommended (SEAR: Bangladesh, Indonesia, Myanmar and Thailand)</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>10. Number of countries reporting treatment outcomes for all cases (not just smear-positive cases)</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>11. Number of countries with electronic and case-based recording and reporting systems</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>12. Number of HBC (n=5) with ≤15% vacancy rates at peripheral-level health facilities</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Indicator</td>
<td>Baseline (2010)</td>
<td>Target 2015</td>
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<tr>
<td>13.</td>
<td>5</td>
<td>11</td>
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<tr>
<td>14.</td>
<td>&lt;5%</td>
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<tr>
<td>15.</td>
<td>15%</td>
<td>&gt;85%</td>
</tr>
<tr>
<td>16.</td>
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</tr>
<tr>
<td>17.</td>
<td>&gt;60%</td>
<td>&gt;90%</td>
</tr>
<tr>
<td>18.</td>
<td>≥65%</td>
<td>≥75%</td>
</tr>
<tr>
<td>19.</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>20.</td>
<td>10%</td>
<td>100%</td>
</tr>
<tr>
<td>21.</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>22.</td>
<td>23%</td>
<td>100%</td>
</tr>
<tr>
<td>23.</td>
<td>87%</td>
<td>100%</td>
</tr>
<tr>
<td>24.</td>
<td>57%</td>
<td>100%</td>
</tr>
<tr>
<td>25.</td>
<td>230 000</td>
<td>100%</td>
</tr>
<tr>
<td>Indicator</td>
<td>Baseline (2010)</td>
<td>Target 2015</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------</td>
<td>-------------</td>
</tr>
<tr>
<td>26. Percentage of people living with HIV enrolled in care started on IPT, among those who are eligible for IPT (<em>NB: It is anticipated that about 50% people living with HIV will be eligible for IPT</em>)</td>
<td>Number of HIV-positive people provided with IPT in TB-HIV high burden countries in SEAR: 0.6 thousand (2010) Global Report 2011</td>
<td>100%</td>
</tr>
<tr>
<td>27. Number of TB–HIV HBCs (India, Indonesia, Myanmar, Thailand) with a plan for infection control in health facilities providing services to people living with HIV</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>
Progress in TB prevention, care and control requires adequate funding. In spite of substantial increase in domestic and external funding over the past decade, gaps in financing TB prevention, care and control remain. Across the HBCs in the Region, domestic funding from national governments is the single largest source of funding. Nonetheless, the Global Fund has contributed a growing amount of funding since 2004. Recent changes in the GF will have negative financial consequences for a number of countries in the Region. This fragile funding situation, health system constraints and critical unmet capacity needs for universal access to high-quality care for all people with TB, including children, introduction of new/rapid diagnostics for TB, taking TB control beyond the health sector, scaling up civil society involvement and addressing TB-diabetes and other co-morbidities, all pose major challenges to TB control programmes.
Table 4 shows NTP budgets, available funding, cost of utilization of general health-care services and total funding required according to country plans, 2012 (US$ million) for the five high burden countries in the Region. Additional information for all Member States can be found in Annex 3. There still are considerable uncertainties regarding the existing estimates of resource requirements and funding gaps. Ambitious targets for scaling up diagnosis and treatment of multidrug-resistant TB (MDR-TB) up until 2015 have also been set, where the costs of treatment are several times higher than those for drug-susceptible TB. Additional resources through increased allocations from national budgets and external sources will need to be sought to sustain TB control programmes over the next ten years. In this context, it will be necessary in some countries to coordinate the process of planning and budgeting under integrated or decentralized health systems.

Table 4: NTP budgets, available funding, cost of utilization of general health-care services and total funding required according to country plans, 2012 (US$ million)

<table>
<thead>
<tr>
<th>Country</th>
<th>NTP budget 2012</th>
<th>Available funding</th>
<th>Funding gap</th>
<th>Cost of general health services (estimated)</th>
<th>Total funding required</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NTP budget</td>
<td>Government (excluding loans)</td>
<td>Loans</td>
<td>Grants (excluding GF)</td>
<td>GF</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>48</td>
<td>1.2</td>
<td>0</td>
<td>2.2</td>
<td>10</td>
</tr>
<tr>
<td>India</td>
<td>210</td>
<td>43</td>
<td>87</td>
<td>0</td>
<td>80</td>
</tr>
<tr>
<td>Indonesia</td>
<td>102</td>
<td>16</td>
<td>0</td>
<td>0.2</td>
<td>47</td>
</tr>
<tr>
<td>Myanmar</td>
<td>29</td>
<td>0.6</td>
<td>0</td>
<td>2.0</td>
<td>8.1</td>
</tr>
<tr>
<td>Thailand</td>
<td>45</td>
<td>34</td>
<td>0</td>
<td>4.5</td>
<td>3.2</td>
</tr>
<tr>
<td>SEAR (HBC)</td>
<td>449</td>
<td>105</td>
<td>87</td>
<td>15</td>
<td>147</td>
</tr>
</tbody>
</table>

Conclusions

Efforts to reach the MDG-related targets have made significant progress in the Region over the past few years. This progress has been made possible through strong political commitment and large investments in TB control for improved infrastructure, reliable drug supply, increased staffing, improved laboratory services, and intensified training and supervision. Reaching the targets outlined in this document, which are in line with the global targets, will require sustaining and further advancing the progress in all countries and particularly in the five high-burden countries (HBCs) in the Region. The achievement of TB-related targets under the MDGs will also depend on how effectively initiatives such as PMDT, PPM and interventions for TB/HIV among others, are implemented. It will also depend on progress in overall health system strengthening. National governments and development partners must fulfil their commitments to mobilizing and sustaining adequate resources to support the full range of activities envisaged.
Annex 1

Resolution of the Regional Committee for South-East Asia

SEA/RC60/R5 The New Stop TB Strategy and its Implementation

Fifth Meeting, 3 September 2007

The Regional Committee,

Recalling World Health Assembly resolutions WHA58.14 and WHA60.19 relating to tuberculosis control,

Reaffirming WHO’s commitment to the global goal of eliminating TB as a public health problem,

Recognizing that substantial progress has been made in the South-East Asia Region towards the achievement of the goals set by the World Health Assembly in 2000 of 70% case detection and 85% treatment success among all smear-positive TB cases by 2005,

Noting with concern the continuing and unacceptably high burden of tuberculosis in the Region, the emergence of drug resistance and the adverse impact of the HIV epidemic on tuberculosis control efforts in the Region,

Affirming that effective tuberculosis control will result in a significant decrease in morbidity and mortality among adults in the most productive age groups, and to the achievement of TB-related Millennium Development Goals,

Acknowledging that many challenges require to be overcome in order to extend equitable access to a minimum standard of care to all TB patients, including the poor and the marginalized, and Having considered the paper and discussions on “TB control: Progress and plans for implementing the new Stop TB Strategy” (SEA/RC60/8),
1. ENDORSES the actions contained therein;

2. URGES Member States:

   (a) to fully implement the national plans for TB control, in line with the New Stop TB Strategy which should include innovative approaches to improve both the quality as well as equity of delivery;

   (b) to develop and sustain adequate human resources and infrastructure to further strengthen delivery of services including TB services, in the context of health systems strengthening;

   (c) to improve intersectoral collaboration, particularly with private health-care providers to widen the reach of standardized services to all TB patients; (d) to ensure effective collaboration between national TB and HIV/AIDS programmes to establish effective interventions for those affected by both TB and HIV;

   (d) to ensure implementation of interventions to effectively address multi-drug-resistant and extensively drug-resistant TB; (f) to enhance communication and social mobilization approaches to increase community awareness, utilization and user-friendliness of services and to reduce stigma;

   (e) to improve surveillance and monitoring mechanisms to better measure the progress, and impact of interventions;

   (f) to support the development of innovative approaches for better service delivery and utilization and contribute to global initiatives in developing new diagnostics, drugs and vaccines which will improve early detection and treatment and prevention of TB;

   (g) to mobilize financial resources in a sustainable manner to allow full implementation of all envisaged interventions, particularly in countries that do not benefit from significant external financing, and

3. REQUESTS the Regional Director:

   (a) to advocate for the highest political support and increased funding from national and international sources to support TB control efforts in the Region;
(b) to enhance technical support to Member States to review and revise their national TB policies, strategies and plans and to assist them in implementation of the new TB strategy in the Region, and

(c) to assist Member States in strengthening health systems and developing human resources to ensure effective implementation of all planned interventions under the new strategy towards reaching the Millennium Development Goals.

SEA/RC60/R5

Fifth Meeting, 3 September 2007
## Annex 2

Estimated incidence and cases notified (by type of TB patients) in Member States of the WHO SEA Region, 2010

<table>
<thead>
<tr>
<th>Country</th>
<th>Estimated incidence - All forms (in thousands with confidence intervals)</th>
<th>New smear-positive</th>
<th>New smear-negative</th>
<th>New extrapulmonary</th>
<th>Relapse</th>
<th>Treatment after failure</th>
<th>Treatment after default</th>
<th>Other retreatment</th>
<th>Type unknown*</th>
<th>Total notifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>330 (270-400)</td>
<td>105 772</td>
<td>21 625</td>
<td>23 506</td>
<td>3 000</td>
<td>961</td>
<td>594</td>
<td>3 251</td>
<td>0</td>
<td>158 709</td>
</tr>
<tr>
<td>Bhutan</td>
<td>1.1 (0.9-1.3)</td>
<td>457</td>
<td>275</td>
<td>518</td>
<td>61</td>
<td>12</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>1 332</td>
</tr>
<tr>
<td>DPR Korea</td>
<td>84 (72-97)</td>
<td>31 240</td>
<td>36 258</td>
<td>13 715</td>
<td>3 408</td>
<td>2 985</td>
<td>1 456</td>
<td>7 209</td>
<td>0</td>
<td>96 271</td>
</tr>
<tr>
<td>India</td>
<td>2 300 (2 000-2 500)</td>
<td>630 165</td>
<td>366 381</td>
<td>231 121</td>
<td>110 691</td>
<td>18 463</td>
<td>72 110</td>
<td>91 708</td>
<td>1 508</td>
<td>1 522 147</td>
</tr>
<tr>
<td>Indonesia</td>
<td>450 (370-540)</td>
<td>183 366</td>
<td>101 247</td>
<td>11 659</td>
<td>4 387</td>
<td>327</td>
<td>862</td>
<td>1 013</td>
<td>0</td>
<td>302 861</td>
</tr>
<tr>
<td>Maldives</td>
<td>0.11 (0.10-0.13)</td>
<td>41</td>
<td>21</td>
<td>33</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>97</td>
</tr>
<tr>
<td>Myanmar</td>
<td>180 (160-210)</td>
<td>42 318</td>
<td>56 840</td>
<td>27 976</td>
<td>4 456</td>
<td>1 495</td>
<td>514</td>
<td>3 804</td>
<td>0</td>
<td>137 403</td>
</tr>
<tr>
<td>Country</td>
<td>Estimated incidence - All forms (in thousands with confidence intervals)</td>
<td>New smear-positive</td>
<td>New smear-negative</td>
<td>New extra-pulmonary</td>
<td>Relapse Treatment after default</td>
<td>Treatment after failure</td>
<td>Treatment after default</td>
<td>Other retreatment</td>
<td>Type unknown*</td>
<td>Total notified</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>---------------------</td>
<td>-------------------------------</td>
<td>------------------------</td>
<td>-----------------------</td>
<td>------------------</td>
<td>---------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Nepal</td>
<td>4(40-58)</td>
<td>15 569</td>
<td>7 210</td>
<td>1 817</td>
<td>2 617</td>
<td>9 718</td>
<td>0</td>
<td>35 649</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>3 14(11-17)</td>
<td>4 635</td>
<td>2 548</td>
<td>1 555</td>
<td>2 38</td>
<td>219</td>
<td>0</td>
<td>10 095</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>94(78-110)</td>
<td>33 450</td>
<td>20 927</td>
<td>11 411</td>
<td>2 817</td>
<td>4 145</td>
<td>0</td>
<td>68 239</td>
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<td></td>
</tr>
<tr>
<td>Timor-Leste</td>
<td>-**</td>
<td>1 530</td>
<td>2 879</td>
<td>41</td>
<td>3</td>
<td>1 843</td>
<td>0</td>
<td>4 829</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEA Region</td>
<td>3 500(3 200-3 700)</td>
<td>1 048 543</td>
<td>618 316</td>
<td>328 789</td>
<td>38 720</td>
<td>139 766</td>
<td>0</td>
<td>2 328 024</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEA Region (2009)</td>
<td>3 500(3 300-3 700)</td>
<td>1 028</td>
<td>626 717</td>
<td>329 316</td>
<td>32 705</td>
<td>77 544</td>
<td>0</td>
<td>1 796</td>
<td></td>
<td></td>
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<tr>
<td>Percentage change 2010 vs. 2009</td>
<td>1.9%</td>
<td>1.9%</td>
<td>-3.0%</td>
<td>-0.2%</td>
<td>2.2%</td>
<td>5.3%</td>
<td>-1.3%</td>
<td>31.6%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*This category includes “cases with unknown history of previous treatment”, except for India that includes “other new cases”.

**Timor-Leste incidence estimates calculated with methodology revised by WHO in 2010, is to be revised upon availability of better quality data.

Therefore in this table figure is reported for the country. Refer to country profile for further details.

Annex 3

Budgets and funding gaps

Available data in the table below from the Global TB Report 2012.¹²

<table>
<thead>
<tr>
<th>Bangladesh</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total budget (US$ million)</td>
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<td>50</td>
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<tr>
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<td>16</td>
</tr>
<tr>
<td>% of budget funded</td>
<td>33</td>
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</tr>
<tr>
<td>% of budget from domestic sources</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>% of available funding from Global Fund</td>
<td>93</td>
<td>93</td>
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</table>

<table>
<thead>
<tr>
<th>Bhutan</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>% of budget funded</td>
<td>111</td>
<td></td>
</tr>
<tr>
<td>% of budget from domestic sources</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>% of available funding from Global Fund</td>
<td>57</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Democratic People’s Republic of Korea</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total budget (US$ million)</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td>Available funding (US$ million)</td>
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</tr>
<tr>
<td>% of budget funded</td>
<td>100</td>
<td>79</td>
</tr>
<tr>
<td>% of budget from domestic sources</td>
<td>23</td>
<td>33</td>
</tr>
<tr>
<td>% of available funding from Global Fund</td>
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<td>65</td>
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</table>

¹² WHO Report 2012 : Global Tuberculosis Control; World Health Organization, Geneva (WHO/HTM/TB/2012.6)
<table>
<thead>
<tr>
<th>Country</th>
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<th>2013</th>
</tr>
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<tbody>
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<td><strong>India</strong></td>
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<td>207</td>
</tr>
<tr>
<td>Available funding (US$ million)</td>
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<tr>
<td>% of budget funded</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>% of budget from domestic sources</td>
<td>54</td>
<td>58</td>
</tr>
<tr>
<td>% of available funding from Global Fund</td>
<td>42</td>
<td>39</td>
</tr>
<tr>
<td><strong>Indonesia</strong></td>
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<td></td>
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<td>Total budget (US$ million)</td>
<td>104</td>
<td>117</td>
</tr>
<tr>
<td>Available funding (US$ million)</td>
<td>49</td>
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<tr>
<td>% of budget funded</td>
<td>47</td>
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<td>% of budget from domestic sources</td>
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</tr>
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<td>% of available funding from Global Fund</td>
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<td>92</td>
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<tr>
<td><strong>Maldives</strong></td>
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<tr>
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<td>&lt;1</td>
<td>&lt;1</td>
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<tr>
<td>Available funding (US$ million)</td>
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</tr>
<tr>
<td>% of budget funded</td>
<td>86</td>
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<td>% of budget from domestic sources</td>
<td>100</td>
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</tr>
<tr>
<td>% of available funding from Global Fund</td>
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<td>0</td>
</tr>
<tr>
<td><strong>Myanmar</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total budget (US$ million)</td>
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<td>31</td>
</tr>
<tr>
<td>Available funding (US$ million)</td>
<td>10</td>
<td>9.3</td>
</tr>
<tr>
<td>% of budget funded</td>
<td>34</td>
<td>30</td>
</tr>
<tr>
<td>% of budget from domestic sources</td>
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<td></td>
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<tr>
<td>% of available funding from Global Fund</td>
<td>79</td>
<td>89</td>
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### Nepal

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<thead>
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</tr>
</thead>
<tbody>
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<td>Total budget (US$ million)</td>
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</tr>
<tr>
<td>Available funding (US$ million)</td>
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<td></td>
</tr>
<tr>
<td>% of budget funded</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>% of budget from domestic sources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of available funding from Global Fund</td>
<td>95</td>
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</table>

### Sri Lanka

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total budget (US$ million)</td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td>Available funding (US$ million)</td>
<td>10</td>
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<tr>
<td>% of budget funded</td>
<td>94</td>
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</tr>
<tr>
<td>% of budget from domestic sources</td>
<td>75</td>
<td>96</td>
</tr>
<tr>
<td>% of available funding from Global Fund</td>
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<td>-</td>
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</table>

### Thailand

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total budget (US$ million)</td>
<td>44</td>
<td>44</td>
</tr>
<tr>
<td>Available funding (US$ million)</td>
<td>41</td>
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<td>% of budget funded</td>
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<td>98</td>
</tr>
<tr>
<td>% of available funding from Global Fund</td>
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</table>

### Timor-Leste

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
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<tr>
<td>Total budget (US$ million)</td>
<td>1.2</td>
<td>1.4</td>
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<td>100</td>
</tr>
<tr>
<td>% of budget from domestic sources</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>% of available funding from Global Fund</td>
<td>93</td>
<td>94</td>
</tr>
</tbody>
</table>
This update of the Regional Strategic Plan for TB care and control 2006-2015 describes the future directions and focus of work for TB control in the WHO South-East Asia Region. The targets, strategies and interventions in this document are consistent with the Stop TB Strategy and the Global Plan to Stop TB 2011-2015, but focus on priorities most relevant to the Region.

A range of interventions is proposed. These interventions are aimed at accelerating progress in the context of evolving challenges, and the requirements of national TB control programmes in effectively meeting challenges. Developing these further will require flexibility and adaptation to suit the varying country contexts, the TB burden and the specific situations in Member countries of the Region. This document is intended for policy-makers, national programme managers and their staff, members of technical advisory groups, interagency coordinating committees or similar bodies, and all supporting partners.

Updated Regional Strategic Plan for TB Care and Control 2012–2015