Ending TB

in the South-East Asia Region

Regional Strategic Plan 2016–2020

World Health Organization
Regional Office for South-East Asia

Ending TB in the South-East Asia Region:

Regional Strategic Plan 2016–2020

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Abbreviations

ACSM	advocacy, communication and social mobilization
AFB	acid-fast bacilli
AIDS	acquired immunodeficiency syndrome
ART	antiretroviral therapy
ARV	antiretrovirals
CBO	community-based organizations
CCM	country coordination mechanism
CDC	Centers for Disease Control, Atlanta, USA
CHW	community health worker
CSMBS	Civil Servant Medical Benefit Scheme (Thailand)
CN	concept note(s)
CPT	co-trimoxazole preventive therapy
CV	community volunteer
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
GDI	Global Drug-resistant TB Initiative
GF	Global Fund Global Fund to Fight AIDS, Tuberculosis and Malaria
GLC	Green Light Committee
rGLC	regional Green Light Committee

GLI	Global Laboratory Initiative
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
IC	infection control JICA Japan International Cooperation Agency
LED	light-emitting diode microscopes
LTBI	latent TB infection
MCH	maternal and child health
MDG	Millennium Development Goals
MDR-TB	multidrug-resistant tuberculosis
M&E	monitoring and evaluation
NFM	New Funding Model
NGO	nongovernmental organization
NRL	national reference laboratory
NSP	national strategic plan
NSP	new smear positive
NTP	national TB control programme
OTC	over-the-counter (sale of medicines)
PAL	practical approach to lung health
PHC	primary health care
PLHIV	persons living with HIV/AIDS
PMDT	programmatic management of drug-resistant tuberculosis
PMTCT	prevention of mother-to-child transmission
PPM	public-private mix

PTB	pulmonary TB
PWID	people who inject drugs
PR	principal recipient
QA	quality assurance
RMNCAH	reproductive, maternal, neonatal, child and adolescent health
RNTCP	Revised National TB Control Programme (of India)
RR-TB	rifampicin-resistant TB
SCC	short coerce chemotherapy
SDG	Sustainable Development Goals
SEA	South-East Asia
SEAR	South-East Asia Region (of WHO)
SLD	Second-line anti-TB drugs
SOPs	standard operating procedures
SSF	single stream funding of the Global Fund
SSS	Social Security Scheme (Thailand)
TA	technical assistance
TB	tuberculosis
TWG-TB	Technical Working Group on TB
UCS	Universal Coverage Scheme (Thailand)
VR	vital registration
WHA	World Health Assembly
WHO	World Health Organization
XDR-RB	extensively drug-resistant TB

Preface

The year 2015 is an historic year as it marks the transition from the Millennium Development Goals (MDGs) to the post-2015 development agenda with its Sustainable Development Goals (SDGs). On 25 September 2015, the 193 countries of the UN General Assembly adopted the 2030 Development Agenda titled *Transforming our world: the 2030 Agenda for Sustainable Development* outlining the 17 Sustainable Development Goals and its associated 169 targets. These goals will be the focus of global and regional priorities for development cooperation and will also guide national priorities in most countries for the coming 15 years. Ending the Tuberculosis epidemic by 2030 is one of the targets under Goal 3, which is to "ensure healthy lives and promote well-being for all at all ages".

The SEA Region met the 2015 Millennium Development Goal (MDG) of halting and reversing TB incidence. The Region also met the Stop TB Partnership target of halving the TB mortality rate and the target of halving TB prevalence (as compared with the 1990 level). Access to TB care has expanded substantially, and almost 22 million TB patients have been treated in the past 10 years.

However, major challenges remain: in 2014 an estimated four million people became ill with tuberculosis in the SEA Region; 340 000 of those were children. Over half a million people died from the disease. In 2014 a total of only 2 580 605 cases of all forms of TB were notified leaving an estimated 1.4 million cases missed (not notified or not diagnosed and notified). More than half of those with HIV are unaware of their status. Those who are tested do so too late—when they have symptoms and their immune systems are already compromised. Only 36% of people living with HIV in the Region are on treatment; so while we can celebrate the achievements of the MDG goals and the Stop TB Partnership targets, we also have to ask ourselves why tuberculosis still kills over half a million people in the SEA Region and why we still cannot find and diagnose and report all people with TB.

Ending the TB epidemic in the SEA Region will require a paradigm shift: in our attitude towards the disease; in how we work together within the health

sector and outside, with communities and across sectors; in what we think is possible. Ending the TB epidemic must become “everybody’s business”. This Regional Strategic Plan 2016-2020 towards ending TB in the South-East Asia Region outlines a way to address persisting challenges, scale up and integrate TB prevention and care into a wider health and community system approach, including an overall commitment to health systems strengthening and major progress towards universal health coverage.

The SEA Region has demonstrated its capacity in aggressively addressing infectious diseases in a comprehensive manner. Efforts to address the HIV AIDs epidemic has resulted in a decline in new infections by 32% between 2000 and 2014 and most recently with the declaration in March 2014 of the South-East Asia Region being free from wild polio virus transmission. This is a testament to the tremendous efforts of all health workers, volunteers and commitment and accountability of governments, partners and society as a whole invested to reach this juncture.

Let us make the same commitment to End the TB Epidemic in our Region!

Dr Poonam Khetrapal Singh
Regional Director

1. Introduction

Tuberculosis (TB) remains a serious public health problem in the South-East Asia Region (SEAR). Every year, TB affects an estimated 4 million people in the World Health Organization's (WHO) South-East Asia (SEA) Region, of which 340 000 are children, accounting for 41% of estimated global TB cases. Although mortality rates have decreased, the estimated absolute number of TB deaths in the Region was over half a million in 2014, with most deaths reported from Bangladesh, India, Indonesia, Myanmar and Thailand. The number of TB deaths is unacceptably high: with a timely diagnosis and correct treatment, almost all people with TB can be cured.

In 2014, the estimated number of HIV positive TB cases was 210 000 corresponding to 11 per 100 000 and 5% of all estimated TB-incident cases. Although the SEA Region has relatively low levels (2.2, range: 1.9–2.6%) of multidrug-resistant (MDR) among newly detected cases, given the large number of TB cases in the Region, this translates to 99 000 estimated MDR-TB cases among notified pulmonary TB cases; this number accounted for 20% of the world's MDR-TB cases in 2014. Of the 30 high MDR-TB-burden countries, six are in the SEA Region: Bangladesh, Democratic People's Republic of Korea, India, Indonesia, Myanmar and Thailand.

The SEA Region has made gains in the fight against TB: it has achieved the 2015 Millennium Development Goal (MDG) of halting and reversing TB incidence, the Stop TB Partnership's target of halving the TB mortality rate and the target of halving TB prevalence (compared with the 1990 level). Access to TB care has expanded substantially and almost 22 million TB patients have been treated in the past 10 years. Treatment success rates among new smear positive (NSP) pulmonary TB (PTB) cases has remained above 85% since 2005 and was 88% in the 2013 cohort. However, major challenges remain and much more needs to be done as current efforts are not sufficient to reach regional and global targets for TB prevention, care and control and for ultimate elimination of the epidemic.

In 2014, a total of approximately 2.6 million cases of all forms of TB were notified leaving an estimated 1.4 million cases missed (not notified or not diagnosed and notified). Only 45% of TB patients are aware of their HIV status.

Of the estimated cases of MDR-TB, only 33 264 (30%) were notified, and only 28 536 of the notified were put on treatment.

Ending the TB epidemic is part of the new global agenda for Sustainable Development with 17 global goals at its core, adopted on 25 September 2015 by the 193 Member States of the United Nations. Goal 3 aims to ensure healthy lives and promote well-being for all at all ages. One of the targets for Goal 3 is to by 2030 end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, waterborne diseases and other communicable diseases.[1]

The year 2015 is a watershed moment in the battle against tuberculosis (TB). It marks the deadline for global TB targets set in the context of the MDGs, and is a year of transitions: from the MDGs to a new era of Sustainable Development Goals (SDGs), and from the Stop TB Strategy to the End TB Strategy. In this transition, paradigm shifts are expected in all sectors, including health. To end the epidemic (defined as an incidence of fewer than 100 cases per million people) by 2035 will require a rapid upgrade of care and managerial standards.

Thus, ending the TB epidemic is not mere biomedical but a developmental challenge. The global, regional, national and local level response to ending the TB epidemic must therefore be a part of an inclusive response designed to meet the overall development goals. Progress towards ending the TB epidemic will depend as much on achieving overall health improvement as it will on optimizing current strategies, developing new tools and technologies to diagnose, treat and prevent TB, and providing these to all in need.

Ending the TB epidemic will require an expansion of the scope and reach of interventions for TB prevention, care and control: the institution of systems and policies to promote an enabling environment, shared responsibilities with universal coverage; and aggressive pursuit of research and innovation to promote development and use of new tools for TB care and prevention.

This *Regional Strategic Plan towards Ending TB in the SEAR 2016–2020* describes the future directions and focus of the work towards TB elimination aiming to support Member States in reducing tuberculosis mortality and

1 See the following link: http://www.un.org/sustainabledevelopment/health/.

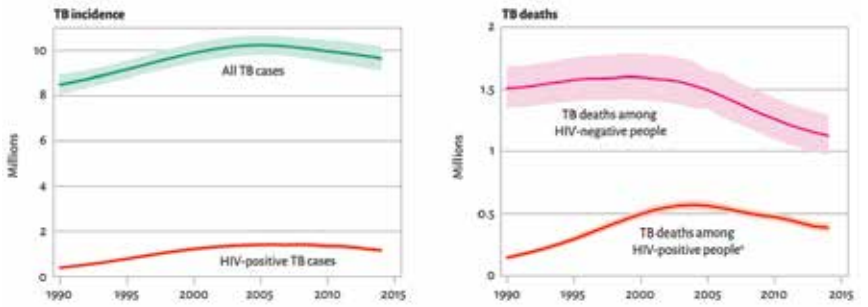
incidence in line with global targets as set in World Health Assembly (WHA) resolution WHA67.1. The resolution will guide countries in addressing persisting and emerging epidemiological and demographic challenges and advancing universal health coverage and robust health systems. The plan builds on and expands the existing updated Regional Strategic plan for TB Care and Control 2012–2015 and focuses on implementation of the End TB Strategy in the coming 5 years within the overall scope of the 20-year strategy covering 2015–2035.

2. Current situation

2.1. Progress towards TB control – the global perspective

Tuberculosis remains a major global health problem. Worldwide, 9.6 million people are estimated to have fallen ill with TB in 2014: 5.4 million men, 3.2 million women and 1.0 million children. Globally, 12% of the 9.6 million new TB cases in 2014 were HIV-positive persons. In 2014, TB killed 1.5 million people (1.1 million HIV-negative and 0.4 million HIV-positive). The toll comprised 890 000 men, 480 000 women and 140 000 children (Figure 1).

Figure 1: Estimated TB cases and deaths, 1990–2014
Estimated absolute numbers of TB cases and deaths (in millions per year), 1990–2014



[a]HIV-associated deaths are classified as HIV deaths according to ICD-10
Source: Global tuberculosis report 2015, World Health Organization, Geneva 2015.
ISBN 978 92 4 156505 9

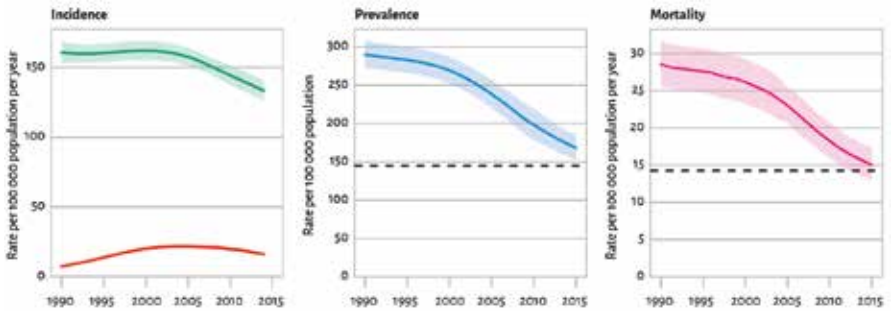
In 2014, 6 million new cases of TB were reported to WHO, fewer than two thirds (63%) of the 9.6 million people estimated to have fallen sick with the disease. This means that worldwide, 37% of new cases went undiagnosed or were not reported. The quality of care for people in the latter category is unknown. Of the 480 000 cases of multidrug-resistant TB (MDR-TB) estimated to have occurred in 2014, only about one fourth of these – 123 000 – were detected and reported. Although the number of HIV-positive TB patients on antiretroviral therapy (ART) improved in 2014 to 392 000 people (equivalent to 77% of notified TB patients known to be coinfected with HIV), this number was only one third of the estimated 1.2 million people living with HIV who developed TB in 2014. All HIV-positive TB cases are eligible for ART.

Funding gaps amounted to US$ 1.4 billion for the implementation of existing interventions in 2015. The most recent estimate of the annual funding gap for research and development is similar, at about US$ 1.3 billion.

The MDG target of halting and reversing TB incidence has been achieved globally, in all six WHO regions and in most of the 22 high TB countries (previous HBC list). Worldwide, TB incidence fell at a rate of about 1.5% per year between 2000 and 2013. The MDG target of halting and reversing TB incidence by 2015 was achieved globally, in all six WHO Regions and in 16 of the 22 high TB-burden countries (previous HBC list). The TB incidence rate has fallen at an average rate of 1.5% per year since 2000. Globally, the TB mortality rate in 2015 was 47% lower than in 1990: the target of a 50% reduction was almost met. The target was achieved in four WHO Regions and in 11 HBCs (previous HBC list).

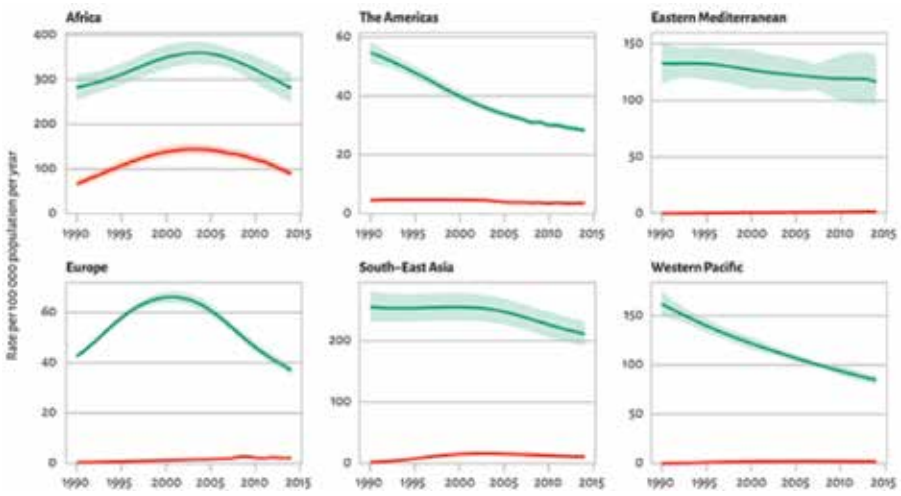
Globally, the TB prevalence rate in 2015 was 42% lower than in 1990. The target of a 50% reduction was met in three WHO regions and in nine HBCs. All three 2015 targets were met in the Region of the Americas, the South-East Asia Region and the Western Pacific Region, and in nine HBCs: Brazil, Cambodia, China, Ethiopia, India, Myanmar, the Philippines, Uganda and Viet Nam. Between 2000 and 2014, TB treatment alone saved 35 million lives among HIV-negative people; TB treatment and antiretroviral therapy saved an additional 8 million lives among HIV-positive people (Figure 2, Figure 3 and Figure 4).

Figure 2: Global incidence, prevalence and mortality rates vs 2015 targets
Left: Estimated incidence rate including HIV-positive TB (**green**) and estimated incidence rate of HIV-positive TB (**red**). Centre and right: The horizontal dashed lines represent the Stop TB Partnership targets of a 50% reduction in prevalence and mortality rates by 2015 compared with 1990. Shaded areas represent uncertainty bands. Mortality excludes TB deaths among HIV-positive people.



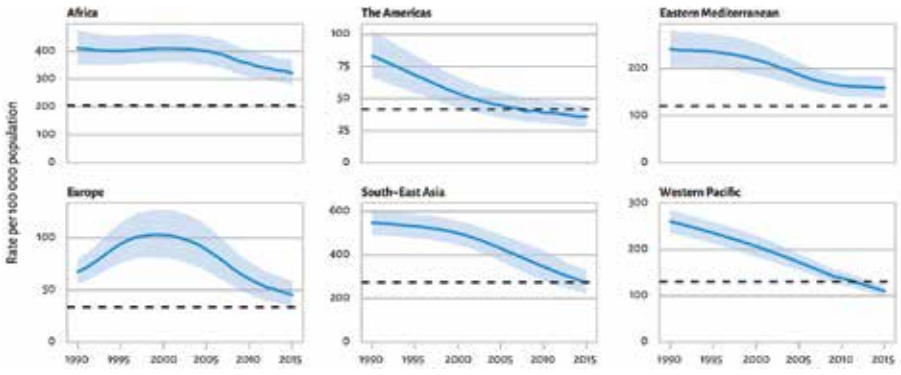
Source: Global tuberculosis report 2015, World Health Organization, Geneva 2015.
ISBN 978 92 4 156505

Figure 3: Estimated TB incidence rates by WHO Region, 1990–2014
Estimated TB incidence (**green**) and estimated incidence of HIV-positive TB (**red**). Shaded areas represent uncertainty bands.



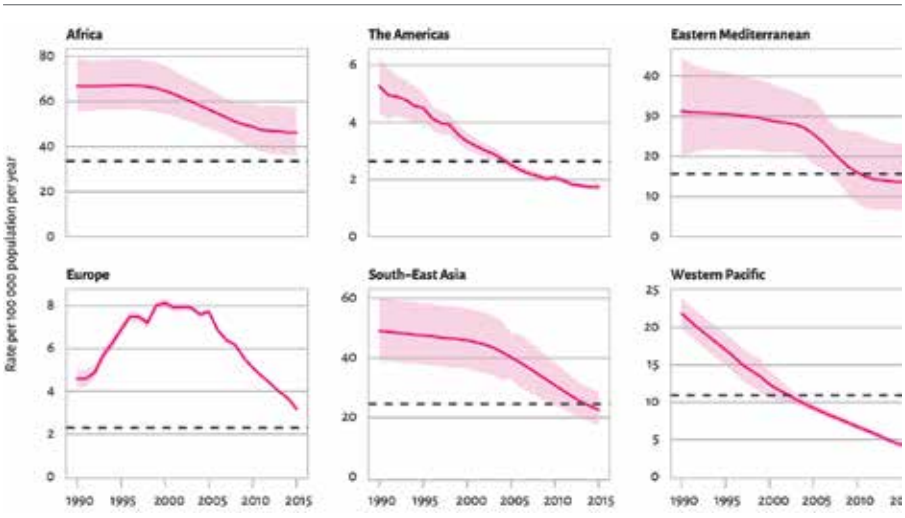
Source: Global tuberculosis report 2015, World Health Organization, Geneva 2015. ISBN 978 92 4 156505 9

Figure 4: Estimated prevalence rates by WHO Region, 1990–2014
Estimated TB prevalence rates 1990–2015, by WHO Region. Shaded areas represent uncertainty bands. The horizontal dashed line represents the Stop TB Partnership target of a 50% reduction in the prevalence rate by 2015 compared with 1990.



Source: Global tuberculosis report 2015, World Health Organization, Geneva 2015.
ISBN 978 92 4 156505 9

Figure 5: Mortality targets: three Regions on track
Estimated TB mortality excludes TB deaths among HIV-positive people. Shaded areas represent uncertainty bands.[a] The horizontal dashed lines represent Stop TB Partnership target of a 50% reduction in the mortality rate by 2015 compared with 1990.



[a] The width of an uncertainty band narrows as the proportion of regional mortality estimated using vital registration data increases or the quality and completeness of the vital registration data improves.

Source: Global tuberculosis report 2015, World Health Organization, Geneva 2015.

ISBN 978 92 4 156505 9

Additional information is available in the Global TB Report 2015 at http://www.who.int/tb/publications/global_report/en/

2.2 Progress towards TB control – current overall situation in the SEAR

The SEA Region of WHO is home to 26% of the world's population; however it is also home to 41% of estimated TB cases – making it by far the world's most affected Region with TB. In 2014, the Region had an estimated 5.4 million prevalent and 4 million incident cases, of which 2.6 million cases (all forms of TB) were reported to National Tuberculosis Control Programmes (NTPs). Out of those reported, 33 264 were MDR-TB and 60 235 of the TB cases were positive for HIV.

The SEA Region has made considerable gains in the fight against TB. The Region has achieved the 2015 Millennium Development Goal (MDG) of halting and reversing TB incidence. The Stop TB Partnership's target of halving the TB mortality rate and the target of halving TB prevalence (compared with the 1990 level) have also been reached. People's access to TB care has expanded

Figure 6: WHO SEAR TB update

WHO South-East Asia Region ■ Population 2014 **1 906 million**

WHO MEMBER STATES 11

Estimates of TB burden[a] 2014

	NUMBER (thousands)	RATE (per 100 000 population)
Mortality (excludes HIV+TB)	460 (350–570)	24 (19–30)
Mortality (HIV+TB only)	62 (51–74)	3.3 (2.7–3.9)
Prevalence (includes HIV+TB)	5 400 (4 400–6 500)	286 (233–343)
Incidence (includes HIV+TB)	4 000 (3 700–4 400)	211 (192–232)
Incidence (HIV+TB only)	210 (180–240)	11 (9.4–12)
Case detection, all forms (%)	62 (56–68)	

Estimates of MDR-TB burden[a] 2014

	NEW	RETREATMENT
% of TB cases with MDR-TB	2.2 (1.9–2.6)	16 (14–17)
MDR-TB cases among notified pulmonary TB cases	40 000 (35 000–47 000)	59 000 (52 000–65 000)

TB case notifications 2014

	NEW[b]	RELAPSE
Pulmonary, bacteriologically confirmed	1 188 654	152 498
Pulmonary, clinically diagnosed	632 418	117 970
Extrapulmonary	389 819	715
Total new and relapse	**2 482 074**	
Previously treated, excluding relapses	98 531	
Total cases notified	**2 580 605**	

Among 2 416 375 reported new and relapse[c] cases disaggregated by age, 168 310 (7.0%) cases were aged < 15 years

Among 2 435 709 reported new and relapse[c] cases disaggregated by sex, male:female ratio = 1.8

Reported cases of RR-/MDR-TB 2014

	NEW	RETREATMENT	TOTAL[b]
Cases tested for RR-/MDR-TB	45 056 (3.8%)	247 336 (67%)	350 871
Laboratory-confirmed RR-/MDR-TB cases			33 264
Patients started on MDR-TB treatment[d]			28 536

TB/HIV 2014

	NUMBER	(%)[e]
TB patients with known HIV status	1 171 258	45
HIV-positive TB patients	60 235	5.1
HIV-positive TB patients on co-trimoxazole preventive therapy (CPT)	51 141	85
HIV-positive TB patients on antiretroviral therapy (ART)	51 231	85
HIV-positive people screened for TB	1 183 007	
HIV-positive people provided with IPT	3 049	

Treatment success rate and cohort size

	(%)	COHORT
New and relapse[c] cases registered in 2013	88	2 100 508
Previously treated cases, excluding relapse, registered in 2013	67	196 439
HIV-positive TB cases, all types, registered in 2013	74	54 235
RR-/MDR-TB cases started on second-line treatment in 2012	49	11 566
XDR-TB cases started on second-line treatment in 2012	37	108

Laboratories 2014

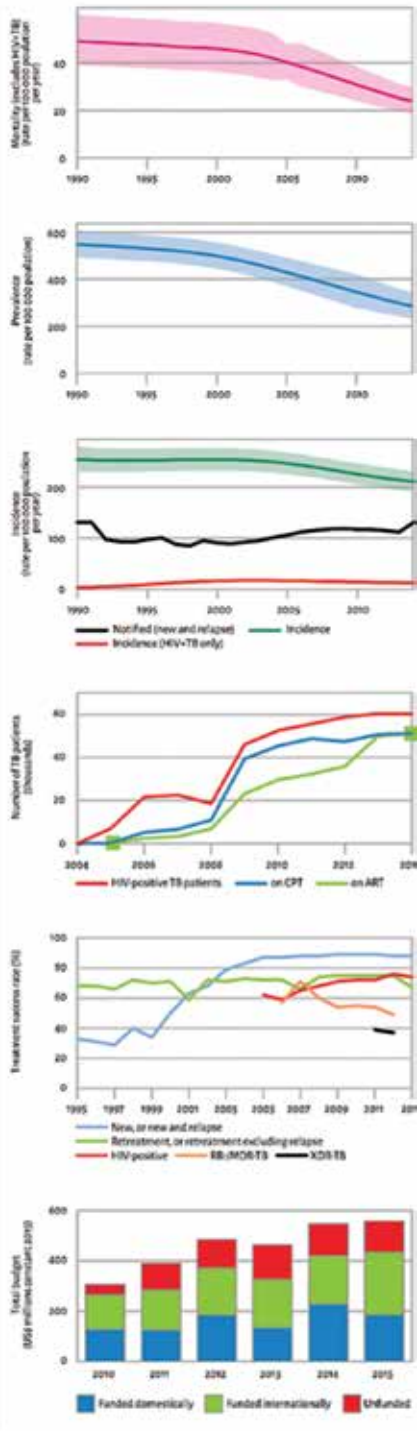
	NUMBER OF MEMBER STATES[f]
Smear (per 100 000 population) ≥ 1	9 out of 11
Culture (per 5 million population) ≥ 1	3 out of 11
Drug susceptibility testing (per 5 million population) ≥ 1	2 out of 11

Financing TB control (low- and middle-income countries)[f,g] 2015

National TB programme budget (US$ millions)	559
% Funded domestically	33
% Funded internationally	45
% Unfunded	22

Data are as reported to WHO. Estimates of TB and MDR-TB burden are produced by WHO in consultation with countries.

[a] Ranges represent uncertainty intervals.
[b] Includes cases with unknown previous TB treatment history.
[c] Some countries reported on new cases only.
[d] Includes patients diagnosed before 2014 and patients who were not laboratory-confirmed as having RR-/MDR-TB.
[e] Calculations exclude countries with missing numerators or denominators.
[f] Data are not collected from all Member States.
[g] Financing indicators exclude funding for general healthcare services provided outside NTPs.



substantially in the Region. The TB treatment success rate for new and relapse smear positive cases of TB have continued to be more than 88% since 2009. Case notification is also increasing: in 2014, Member States notified a total of approximately 2.6 million cases of TB. This represents an increase over cases notified in 2013 and suggests an increase in access to quality TB care services.

The full set of data illustrating the situation in the Region is found in Figure 5 and Table 1.

Table 1: Estimates of TB disease incidence, prevalence and mortality in Member States of the South-East Asia Region (rates per 100 000 population), 2014

Country	Population*	Incidence rate of all forms of TB (uncertainty intervals)	Prevalence rate of all forms of TB (uncertainty intervals)	Death rate for all forms of TB, excluding HIV (uncertainty intervals)
Bangladesh**	159 000 000	227 (200-256)	440 (211-659)	51 (37-68)
Bhutan	<1000 000	164 (148-181)	190 (75-359)	9.5 (5.1-15)
Democratic People's Republic of Korea ****	25 000 000	442 (412-473)	552 (150 1 210)	20 (7.9-37)
India	1 295 000 000	167 (156-179)	195 (131-271)	17 (12-27)
Indonesia	254 000 000	399 (274-546)	647 (513-797)	41 (26-59)
Maldives	<1 000 000	41 (36-47)	56 (25-98)	2.3 (1.9-2.8)
Myanmar	53 000 000	369 (334-406)	457 (352-575)	53 (38-70)
Nepal	28 000 000	158 (139-178)	215 (102-369)	17 (12-24)
Sri Lanka	21 000 000	66 (57-73)	99 (51-164)	6.1 (4.8-7.6)
Thailand	68 000 000	171 (90-276)	236 (161-326)	11 (5.7-18)
Timor-Leste	1 200 000	498 (411-594)	802 (426-1 340)	94 (66-126)
SEAR	**1 906 000**	**211 (192-232)**	**286 (233-343)**	**24 (19-30)**

Source: Global tuberculosis report 2015, World Health Organization, Geneva 2015.
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3. Challenges and opportunities

3.1 Challenges

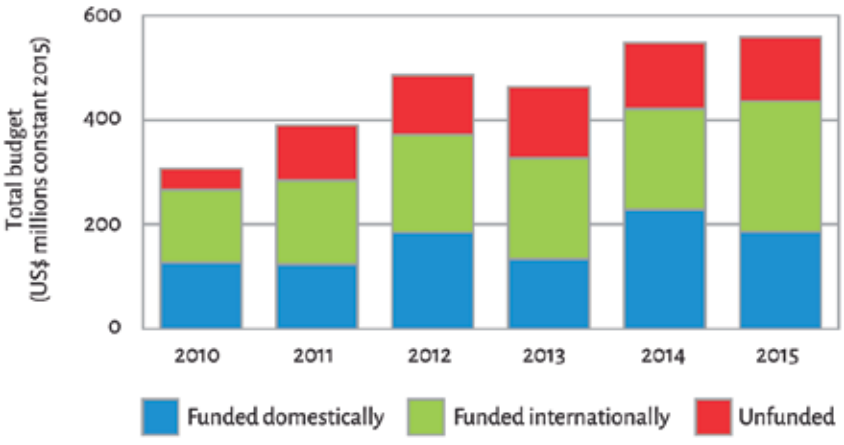
Although achievements in TB control in the SEA Region over the past two decades have been substantial, they are far from enough to ensure the necessary progress towards the target of the elimination of TB by 2035. Analyses of constraints to regional TB control bring forward major persisting barriers. These include:

1. Overreliance on donor funding

There is insufficient resource mobilization and even in countries with a smaller funding gap, the funding from international donors is considerable. National governments meet an average of 40% of current budgets for NTPs. However, variation among countries is considerable (Table 2).

It should also be noted that additional interventions may need to be planned for to make the essential progress towards the targets for ending the TB epidemic, which have not been included in the financing reported for 2015.

Table 2. Financing TB control 2015(a)



Financing indicators exclude funding for general health-care services provided outside of NTPs.

Source: Global tuberculosis report 2015, World Health Organization, Geneva 2015.
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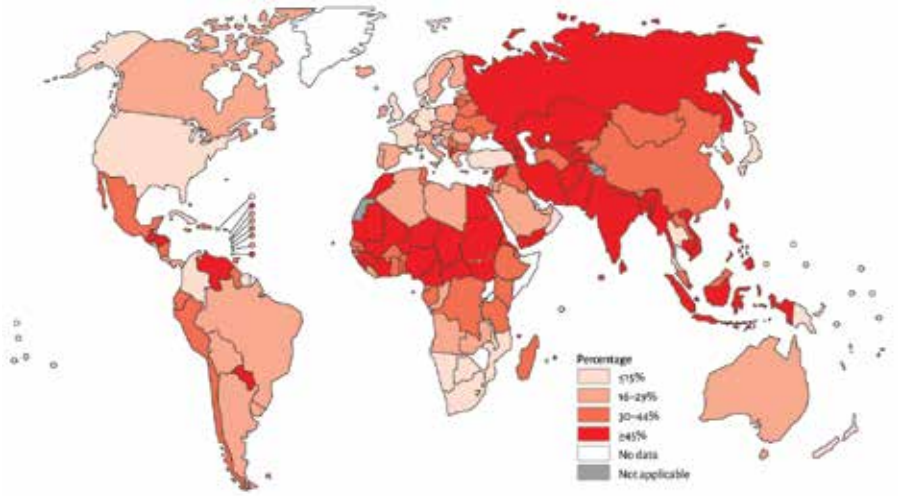
Health financing data from national health accounts provide insights into the current status of progress towards universal health coverage (UHC). Two suggested benchmarks required to achieve UHC are that health spending reaches at least 6% of gross domestic product (GDP) and that out-of-pocket expenditures account for less than 15% of total health spending. Most countries, including all of the 22 HBCs (previous HBC list) and all low-income countries, have not yet reached these benchmarks. Among SEAR Member States, Thailand is closest to doing so.

The decreased domestic funding for TB control should also be seen in light of the out-of-pocket expenditures on health in the Region. With the exception of Thailand and East Timor (no data from Democratic People's Republic of Korea), out-of-pocket expenditure as a percentage of total health expenditures 2013 exceeded 45% (Figure 6*).*

Figure 7: Out-of-pocket expenditure as a percentage of total health expenditures, 2013



Source: Global tuberculosis report 2015, World Health Organization, Geneva 2015.
ISBN 978 92 4 156505 9

2. More than 40% of the estimated incident cases in the Region are either not detected and not treated or detected by private or public services but not notified to the ministries of health

- Delayed diagnosis and treatment of persons with TB, including children.

- Unregulated and growing private sector; many public and private health providers remain delinked from national tuberculosis control efforts and there is insufficient involvement of big hospitals (public and private), lung clinics and other specialized facilities seeing people with respiratory symptoms;

- Insufficient progress in scaling up programmatic management of DR-TB (PMDT);
- Insufficient progress in scaling up TB-HIV collaborative activities;
- Inadequate laboratory capacity;
- Insufficient strategies to address populations at risk including targeted screening/active case finding.

3. Persisting weaknesses in the health systems (see also Box 1)

- Weak health systems:
  - Limited access to quality health services;[2]
  - Overstretched and weak performance of health services, not only related to services for people with TB, but limiting access to high-quality tuberculosis care;
  - Poor governance and weak accountability mechanisms;
  - Serious shortages of well-trained, motivated and supported health workers and unfair distribution of them within and across countries; and lack of knowledge or capability in many key areas such as quality assurance;
- Insufficient data collection, quality and use of data at all levels;
- Limited linkages required across social sectors in order to address poverty, undernutrition and risk factors that adversely influence people's vulnerability to tuberculosis, and the health outcomes of people with tuberculosis;
- Limited programme management capacity with limited involvement of NTPs in decision-making related to the health sector reform processes while NTPs are affected by changes made.

2 *Tracking universal health coverage: first global monitoring report*. World Health Organization. World Bank. 2015. ISBN 978 92 4 156497 7

4. **Insufficient co-management of noncommunicable diseases and tuberculosis comorbidities**

   - Risk factors of tuberculosis such as diabetes, tobacco smoking, silicosis, alcohol and drug misuse, and undernutrition hamper tuberculosis control, especially in low- and middle-income countries.

5. **Insufficient regulatory systems and mechanisms**

   - Absence of universal health coverage aggravates the economic burden on the poor. This hardship is compounded by a lack of social protection mechanisms to address associated income loss and nonmedical costs.
   - Weak regulatory mechanisms essential to ensure effective infection control, rational use of tuberculosis diagnostics and medicines, mandatory disease notification, functioning vital registration systems, and protection of the legal rights of people with tuberculosis.

6. **Insufficient long-term strategies to address the underlying determinants**

   - Specifically, effective tuberculosis prevention will require actions resulting in poverty reduction, improved nutrition, and better living and working conditions as well as strategies to mitigate the impact of migration and of ageing populations that are risk factors for tuberculosis (Table 3).

Box 1: Health system weaknesses with implications for TB prevention care and control

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 among 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 among different public sector entities involved in health-care planning and implementation, including limited coordination among 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 among 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 nonperformance-based career opportunities.
- Poor supervision and quality control mechanisms.
- Inadequate 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 among different levels of the system and among 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 among providers (public and private).

Table 3: GDP per capita – current US dollars

Country	2010	2014
Bangladesh	763	1096
Bhutan	2211	2379
Democratic People's Republic of Korea	No data	No data
India	1417	1631
Indonesia	3137	3515
Maldives	7161	8625
Myanmar	No data	1197
Nepal	596	698
Sri Lanka	2400	3631
Thailand	4802	5561
Timor-Leste	876	1280
Australia	51 809	61 887
Malaysia	8754	10 830

Source: World Bank 2015.

3.2 Opportunities

While the barriers to effective TB control are considerable, there are also more opportunities than before to make major advances.

- **The World Health Assembly resolution WHA67.1 adopting the post-2015 global tuberculosis strategy**

  The bold decision made by ministers of health to end the TB epidemic by 2035 provides an unprecedented platform for a holistic approach to and a collective effort of multiple stakeholders within and outside the government.

- **The post-2015 development agenda**

  While the Millennium Development Goals served as a milestone in global development since their inception in 2000, the development agenda beyond 2015 calls for an integrated policy approach to ensure inclusive economic development, inclusive social development, peace and security and environmental sustainability within a development agenda that responds to the aspirations of all people for a world free of want and fear. This platform provides new opportunities for Member States to put in place and reaffirm steps to ensure holistic, comprehensive approaches to reach the ambitious targets for TB control and elimination. Clearly, adoption and implementation of the

Regional Strategic Plan will require unprecedented commitment to break the boundaries of the current programme focused response and make it a systemic one.

- **Successful examples of implementation of Universal Health Coverage schemes in the Region serve as examples**

  This is illustrated by a case study from Thailand in Box 2 below. Although the UHC scheme in Thailand does not yet cover all persons in the country as migrants are excluded, it is an example of the implementation of a UHC scheme that can be further developed.

Box 2: Universal Coverage Scheme in Thailand[3]

Thailand's model of health financing and its ability to rapidly expand health insurance coverage to its entire population presents an interesting case study. Even though it is still a middle-income country with limited fiscal resources, the country managed to reach universal health insurance coverage through three main public schemes: the Universal Coverage Scheme (UCS), the Social Security Scheme (SSS), and the Civil Servant Medical Benefit Scheme (CSMBS).

The UCS, which is the largest and most instrumental scheme in the expansion of coverage to the poor and to those in the informal sector, is the focus of this chapter .The UCS provides comprehensive benefits packages for its 48 million members, 3 including coverage of inpatient and outpatient care, surgery and drugs. It relies on funding support from the central government, and is channelled to providers through a system of strategic purchasing in which the purchaser and provider are separate from each other. The UCS employs several mechanisms to help it contain costs while providing care to its beneficiaries. The scheme uses payment mechanisms (capitation and case-based payments with a global budget) that send strong cost-containment incentives to the providers.

The UCS also has monopoly power in its negotiation with providers and pharmaceutical companies to lower prices. Supplementary add-on payments for some high-cost treatments and interventions are also provided to improve utilization. A monitoring and evaluation system is also in place.

The historical development of a health insurance system towards universal coverage in Thailand can provide useful lessons for other lower- and middle-income countries. Thailand's path towards universal coverage relied on a common approach of starting with the poor and formal sectors. The country also experimented with Voluntary Health Card Schemes, which were found to be unsuccessful as a means of expanding coverage to the uninsured population, especially in the informal sector. The chosen approach towards universal coverage was, therefore, to reform the health financing system and create a new financing scheme for the uninsured population, the UCS, using lessons from previous health insurance schemes.

3 UNICO Study Series 20: Health Financing Reform in Thailand: Toward Universal Coverage under Fiscal Constraints. Piya Hanvoravongchai, The World Bank, Washington DC, January 2013

- **Increased focus on Universal Health Coverage**

  Universal health coverage (UHC) is at the centre of current efforts to strengthen health systems and improve the level and distribution of health and health services. Regional initiatives such as the Regional Conference of Parliamentarians on Strengthening of National Public Health Systems for Emerging Health Challenges held in Bangkok, Thailand, from 19–21 March 2012. At this meeting, the Bangkok Call for Action on Strengthening of National Public Health Systems for Emerging Health Challenges set an example of broader initiatives of activities contributing to building a broader platform for accelerating work towards the TB control and elimination targets (Annex 3).

- **Availability of external funding**

  All countries (except for one) in the SEAR have active grants from the Global Fund totaling US$ 1.17 billion, not including health system strengthening and TB. Bilateral donors such as USAID are providing substantial funding for Bangladesh, India, Indonesia and Myanmar.

- **Availability of better data (prevalence surveys) to guide the development of strategic interventions**

  With national population-based surveys of the prevalence of TB disease being implemented or having already been implemented in countries of the Region with bigger populations, (Bangladesh, Indonesia, Myanmar, and Thailand, and planned in Democratic People's Republic of Korea and Nepal), data are available to the NTPs to allow a more accurate and targeted planning of the response.

4. The End TB Strategy

In May 2014, the World Health Assembly unilaterally endorsed resolution WHA67.1 adopting the global strategy and targets for tuberculosis prevention, care and control after 2015. The strategy includes (1) bold vision of a world without tuberculosis, and its targets of ending the global tuberculosis epidemic by 2035 with a reduction in tuberculosis deaths by 95% and in tuberculosis incidence by 90% (or to fewer than 10 tuberculosis cases per 100 000 population), and elimination of associated catastrophic costs for tuberculosis-affected households; (2) its associated milestones for 2020, 2025 and 2030; (3) its principles addressing: government stewardship and accountability; coalition-building with affected communities and civil society; equity, human rights and ethics; and adaptation to fit the needs of each epidemiological, socioeconomic and health system context; (4) its three pillars of: integrated, patient-centred care and prevention; bold policies and supportive systems; and intensified research and innovation (Table 4).

The resolution also urges all Member States to:

(1) adapt the strategy in line with national priorities and specificities;

(2) implement, monitor and evaluate the strategy's proposed tuberculosis-specific health sector and multisectoral actions with high-level commitment and adequate financing, taking into account the local settings;

(3) seek, with the full engagement of a wide range of stakeholders, to prevent the persistence of high incidence rates of tuberculosis within specific communities or geographical settings.

Although significant progress has been made towards the TB control targets, it is not enough. Several challenges persist in reducing the global burden of TB and the pace of its reduction. These challenges vary according to country-contexts but addressing them effectively calls for a holistic approach in all contexts.

The targets and milestones for the End TB Strategy are set for 2020, 2025, 2030 and 2035. The milestones for the End TB Strategy for 2030, the target year for the SDGs, are:

- **80%** reduction in TB incidence rate (compared with 2015)
- **90%** reduction in TB deaths (compared with 2015)
- **100%** families protected from facing catastrophic costs due to TB.

Table 4: The End TB Strategy

Vision	**A world free of tuberculosis** – zero deaths, disease and suffering due to tuberculosis			
Goal	**End the global tuberculosis epidemic**			
Indicators	**Milestones**		**Targets**	
	2020	**2025**	**2030***	**2035**
Reduction in number of TB deaths compared with 2015 (%)	35%	75%	90%	95%
Reduction in TB incidence rate compared with 2015 (%)	20% (<85/100 000)	50% (<55/100 000)	80% (<20/100 000)	90% (<10/100 000)
TB-affected families facing catastrophic costs due to TB (%)	0	0	0	0

PRINCIPLES

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

PILLARS AND COMPONENTS

1. INTEGRATED, PATIENT-CENTRED CARE AND PREVENTION
- A. Early diagnosis of tuberculosis including universal drug-susceptibility testing, and systematic screening of contacts and high-risk groups
- B. Treatment of all people with tuberculosis including drug-resistant tuberculosis, and patient support
- C. Collaborative tuberculosis/HIV activities, and management of comorbidities
- D. Preventive treatment of persons at high risk, and vaccination against tuberculosis

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

3. INTENSIFIED RESEARCH AND INNOVATION
- A. Discovery, development and rapid uptake of new tools, interventions and strategies
- B. Research to optimize implementation and impact, and promote innovations

* Targets for the United Nations "Sustainable Development Goals" under formulation.

5. Guiding principles of the Regional Strategy

5.1 Government stewardship

Government stewardship refers to the wide range of functions carried out by governments as they seek to achieve national health policy objectives. In addition to improving overall levels of population health, objectives should be framed in terms of equity, coverage, access, quality, and patients' rights. National policy may also define the relative roles and responsibilities of the public, private and voluntary sectors – as well as civil society – in the provision and financing of health care.

Government stewardship is fundamental to implementing and achieving the ambitious goal of eliminating TB. It entails providing the vision and direction of the response to tackle the TB epidemic, defining the policy and regulatory frameworks, guiding and facilitating actions of many stakeholders, sharing delivery of relevant services and putting in place mechanisms for monitoring and evaluation. A comprehensive response under the Regional Strategic Plan will require involvement of authorities from health and social sectors as well as other ministries such as finance, education, justice, labour, urban planning and rural development. Stewardship responsibilities should be shared by all levels of government – central, provincial and local.

To ensure accountability, monitoring and evaluation needs to be regular, systematic and transparent and all actors held publicly accountable.

5.2 TB prevention, care and control as part of health system strengthening based on primary health-care principles

Effective and sustainable TB prevention, care and control services increasingly rely on general health systems, especially on well-functioning primary health care (PHC), with effective links with community-based health care and nongovernmental health-care providers (as relevant). Weak health systems pose many barriers to effective provision of high-quality diagnostic and treatment services for TB. These services are an important part of health systems, and TB programmes are contributing substantially to health system

strengthening (HSS) through investments in laboratory infrastructure, human resource development, information system development as well as through developing innovative service delivery strategies. NTPs can further contribute to the strengthening of the general health system by promoting and engaging in:

- harmonization of TB control planning and budgeting process with sectorwide and even intersectoral planning frameworks;
- optimization of the management of human resources for health;
- reduction of duplicative structures and systems;
- collaboration and coordination with other programmes and interventions for service delivery aiming at universal access to quality care;
- development of tuberculosis sensitive policies for universal health coverage and strengthening of regulatory frameworks.

5.3 Fostering partnerships at all levels

Without partnerships, there is no TB elimination. TB partners are every person or group, public or private (including civil society/NGOs and communities), who has awareness, willingness, ability and high commitment to support and contribute towards TB elimination in their own capacity and potentials. 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 NTPs 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 efforts to eliminate TB in an effective, efficient and continuous manner, and all players as equal partners, regardless of who they are.

5.4 Promote ethical values and human rights principles

Governments have an obligation to ensure universal access to services for TB prevention, care and control. Therefore, a comprehensive strategy to End TB should seek to protect individuals and communities through a timely diagnosis and 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.[4]

4 *Guidance on ethics of tuberculosis prevention, care and control*, World Health Organization, Geneva 2010 (WHO/HTM/TB/2010.16).

6. Vision, goal, objectives, targets and milestones

6.1 Vision and goal

The vision for TB control in the SEA Region is to have a *Region free of TB* with zero deaths, disease and suffering due to TB. All Member States can adopt this vision in national strategies and plans.

The goal for TB control in the SEA Region is to *End the TB epidemic in the Region by 2035*, by adopting and adapting the vision, milestones and targets as outlined in resolution WHA67.1.

6.2 Objectives

The overall objectives of the plan are to:

- advance universal access to high-quality care for all people with TB as part of robust health systems.
- reduce the human suffering and socioeconomic burden associated with TB.
- protect vulnerable populations from TB, TB/HIV, and drug-resistant TB.
- roll out new tools and enable their timely and effective use.
- protect and promote human rights in TB prevention, care and control.

6.3 Regional targets and milestones

With the goal of ending TB in the SEA Region by 2035, this Regional Strategic Plan provides guidance for the first 5 years, 2016–2020 towards this date. Ending the regional TB epidemic is defined as reducing the regional burden of TB disease to ≤10 cases per 100 000 population. For comparison, regionally there was an estimated 211 (192–232) cases per 100 000 population in 2014.

The Regional Strategic Plan to End TB 2016–2020 includes three high-level, overarching indicators, and corresponding regional targets and milestones as detailed in Table 4 below. The long-term regional targets for 2030 reductions in TB cases and deaths correspond to the end date of the United Nations' post-2015 Sustainable Development Goal framework, within which targets have

been set for 2030.[5] The SDG framework includes the End Strategy 2030 targets for reductions in TB cases and deaths as part of a health-related subgoal. The corresponding regional milestones are for 2020 – the period covered by this strategic plan – and 2025.

Table 5: The Regional Strategy to End TB – three high-level regional indicators and associated targets and milestones

Indicators	Milestones		Targets	
	2020	2025	SDG 2030	End TB 2035
Percentage reduction in the absolute number of TB deaths (compared with 2015 baseline estimated at 460 000 thousand)	35%	75%	90%	95%
Percentage reduction in the TB incidence rate (compared with 2015 baseline, estimated at about 211 cases per 100 000 population)	20%	50%	80%	95%
Percentage of TB patients and their households experiencing catastrophic costs due to TB (level in 2015 unknown)	0%	0%	0%	0%

The third high-level indicator – the percentage of TB patients and their households experiencing catastrophic costs as a result of TB – is chosen because of its direct link to progress towards universal health coverage and universal social protection. UHC is defined as "all people who need health services (promotion, prevention, treatment, rehabilitation and palliation) receive them, without undue financial hardship. It has two interrelated components: the full spectrum of good-quality essential health services according to need, and protection from financial hardship, including possible impoverishment, due to out-of-pocket payments for health services."[6] Social protection includes replacement of income when this is lost due to ill health. Major regional progress towards UHC and social protection by 2025 are fundamental requirements for achievement of the regional targets for reductions in TB cases and deaths.

5 The SDGs provide a new development framework for 2016–2030, replacing the 2000–2015 Millennium Development Goal (MDG) framework. For further details, see https://sustainabledevelopment.un.org/topics/sustainabledevelopmentgoals.

6 Monitoring progress towards universal health coverage at country and global levels: Framework, measures and targets. WHO and World Bank Group, 2014. WHO/HIS/HIA/14.1.

6.4 Projected regional and country-specific trajectory of the TB incidence rate and TB deaths 2015–2035 required to reach the 2035 targets

The projected trajectories for the regional and country-specific reductions in TB mortality and incidence are shown below in Figure 7, Figure 8 and Figure 9. The dotted lines are representing the current trend, continuous line are representing the needed decline to reach the set targets. TB deaths increase under current trends (dotted lines) in some countries because the rate is assumed stable but population is increasing and therefore, the number of TB deaths is projected to increase at the same rate.

Figure 8: Projected regional trajectory of TB incidences and TB deaths 2015–2035 in countries of the South-East Asia Region (Global TB Report 2015)
Dotted line representing the current trend, continuous line representing needed decline to reach targets.

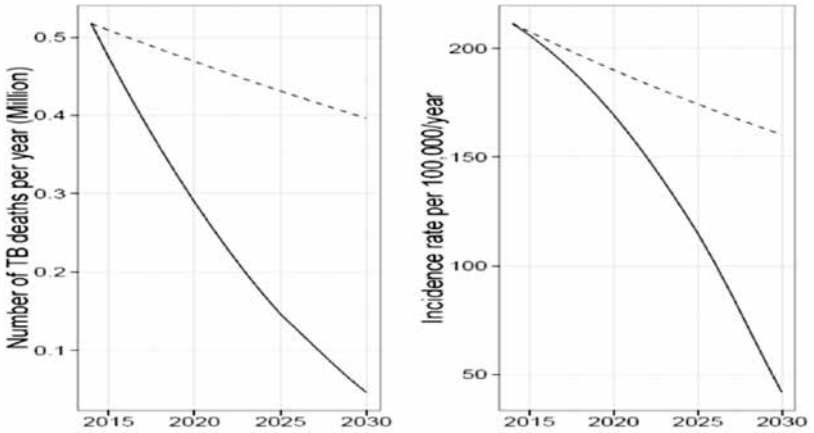


Figure 9: Projected country-specific trajectory of TB incidences 2015–2035 in countries of the South-East Asia Region
Dotted line representing the current trend, continuous line representing needed decline to reach targets.

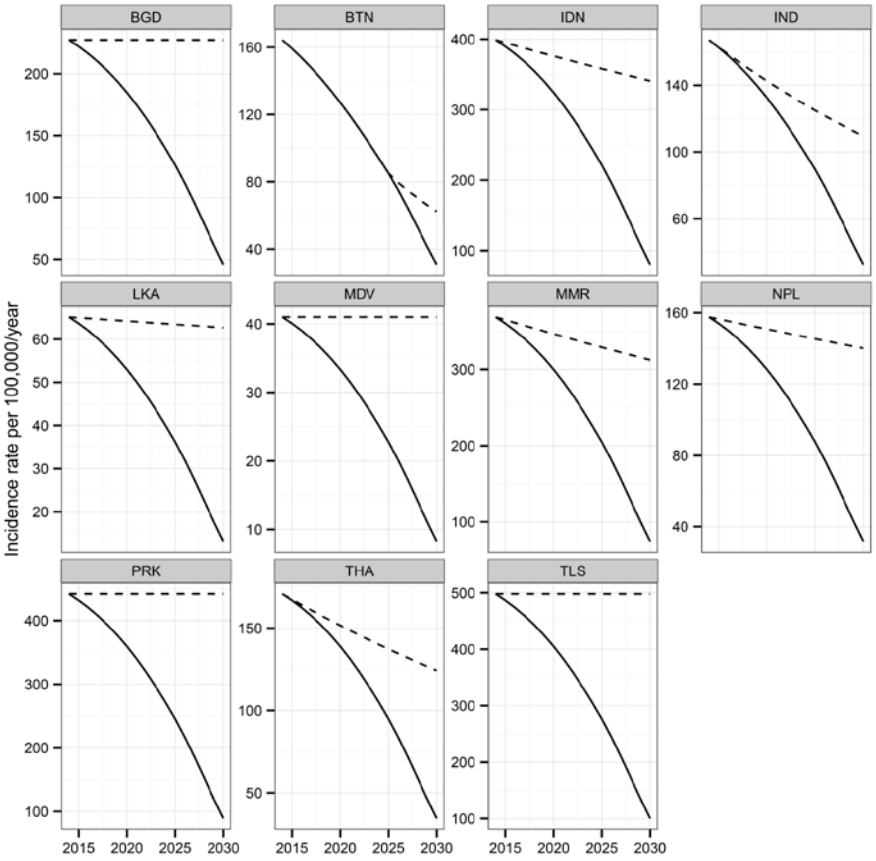
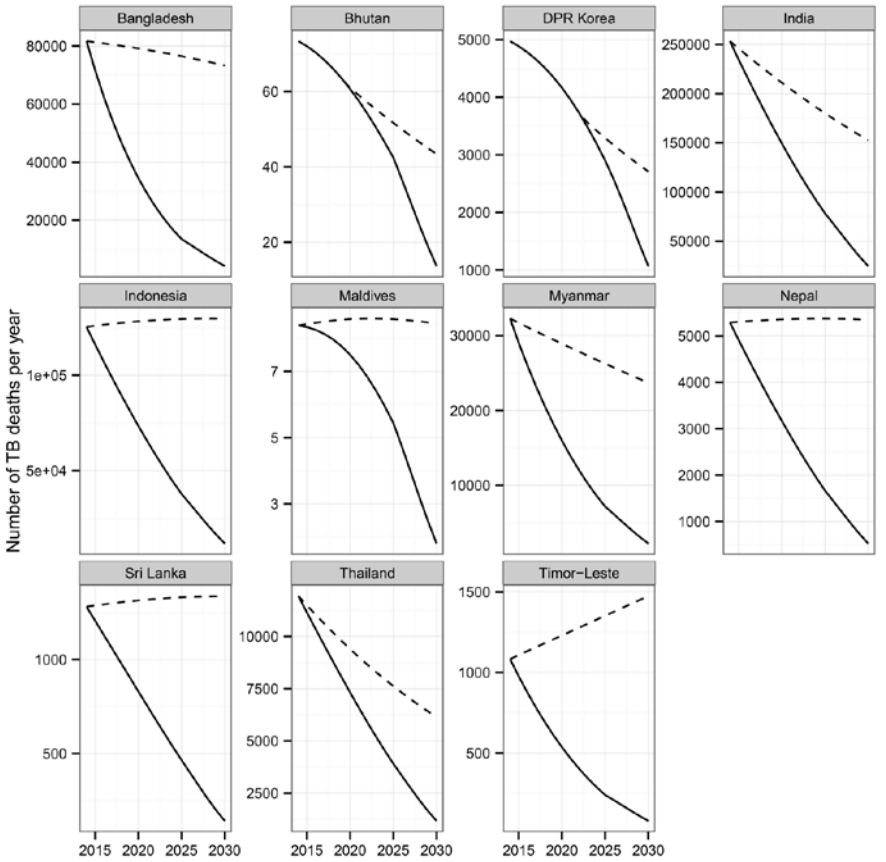


Figure 10: Projected country-specific trajectory of TB deaths 2015–2035 in countries in the SEA Region
Dotted line representing the current trend, continuous line representing needed decline to reach targets.



6.5 Monitoring progress and impact

A top-ten list of priority indicators that are relevant for both the regional and national monitoring of progress in implementation of the Regional Strategic Plan to End TB is shown in Annex 4.[7] This table also defines the recommended *target level* for each indicator, and explains the rationale for its inclusion in the "top-ten". The table does not suggest a common *target year* that applies

7 See the supplementary appendix that accompanied the following publication: Uplekar M, Weil D, Lonnroth K et al.; for WHO's Global TB Programme. WHO's new End TB Strategy. *Lancet* 2015: S0140-6736(15)60570-0.

to all countries. For each indicator, an essential part of adapting the Regional Strategic Plan to End TB at the national level is to define the year in which the target level should be achieved. Some of the Member States will already have achieved the recommended target level, and targets can be set to sustain or improve upon the current level. In other Member States, the target year will need to be defined based on the baseline situation and the anticipated speed and scale at which the necessary improvements can be made.

The percentage of TB patients (and their households) facing catastrophic costs can be estimated through random health facility-based surveys in which a sample of TB patients are interviewed about costs of health care for TB diagnosis and treatment. A standard questionnaire can be used to collect information about direct medical costs (purchase of medicines, payments for diagnostic tests, net of reimbursements), payments for transport, lodging and food expenses as well as income losses from illness and care seeking (net of transfers, such as income replacement) faced by the patient and their household. The same questionnaire can be used to collect information related to household income (either self-reported or derived from asset scores[8]). Using these data, the total cost (direct and indirect combined) of TB to the household can be calculated as a percentage of annual household income. If the total cost exceeds 20% of annual household income, the cost is considered catastrophic. This threshold is based on expert opinion rather than empirical evidence, which is limited[9]; it may be adjusted after further research.

8 Asset scores allow definition of the income quintile to which the household belongs, from which estimates of income can be derived using data on income quintiles available from national household demographic and expenditure surveys.

9 Wingfield T, Boccia D, Tovar M, et al. Defining catastrophic costs and comparing their importance for adverse tuberculosis outcome with multidrug resistance: a prospective cohort study, Peru. 2014. [make consistent the fonts used in FNs]

7. Strategic directions and interventions

The strategic directions, areas of interventions and activities to reach the overall goal, vision, objectives and targets to End TB are grouped under the following three strategic directions:

(1) Integrated patient-centred care and prevention

(2) Bold policies and supportive systems

(3) Intensified research and innovation.

Implementation of strategies and interventions under the three strategic directions requires the combined efforts as well as close coordination and collaboration among and by NTP and multiple stakeholders within and outside the government. An overview is presented in Table 6 below.

Table 6: Strategic directions, strategies and key interventions of the Regional Strategic Plan to End TB in SEAR, 2016–2020

Strategic directions	Strategies	Key interventions	Section
Strategic Direction 1: Integrated patient-centred care and prevention	Strategy 1.1: Early diagnosis of TB, including universal drug susceptibility testing for all people with TB	Improve community awareness of and knowledge about TB	7.1.1
		Minimize barriers to health care	
		Strengthen identification of people with presumptive TB including systematic screening for TB among selected high-risk groups	
		Ensure universal access to quality assured diagnosis, including universal drug susceptibility testing and the roll-out of new diagnostics	
		Improve referral and notification practices	

Strategic directions	Strategies	Key interventions	Section
	Strategy 1.2: Ensure equitable access to quality treatment of people with TB including TB resistant to first-line anti-TB medicines, and provide patient support	Treat all forms of TB sensitive to first-line anti-TB medicines	7.1.2
		Treat all cases of TB resistant to first-line and second-line anti-TB medicines	
		Treat all children with TB	
		Ensure patient-centred mechanisms and systems for social and psychological support to patients in need to ensure effective ambulatory treatment adherence including follow-up after treatment	
		Establish palliative care mechanisms for treatment of those M/XDR-TB patients in need.	
	Strategy 1.3: Scale up TB-HIV collaborative activities	Scale up access to HIV testing among TB patients	7.1.3
		Scale up access to CPT for HIV-positive TB patients according to international guidelines	
		Scale up access to ART for HIV-positive TB patients according to international guidelines	
		Scale up screening for TB among people living with HIV according to international guidelines	
		Scale up access to IPT among people living with HIV and do not have active TB according to international guidelines	
		Scale up the implementation of measures for TB infection control in health-care facilities providing services to people living with HIV	
	Strategy 1.4: Ensure screening for and management of comorbidities	Ensure integrated management at primary health-care level of TB comorbidities and noncommunicable diseases of documented risk such as diabetes	7.1.4
		Routinely assess elderly people attending health services and other institutions	
	Strategy 1.5: Ensure preventive treatment of people at high risk; and vaccination against TB	Expand preventive treatment of people with high risk of tuberculosis, especially children below 5 years of age in close contact with adults affected with TB	7.1.5
		Ensure that WHO recommendations on BCG immunization are implemented through the EPI	

Strategic directions	Strategies	Key interventions	Section
Strategic Direction 2: Bold policies and supportive systems	Strategy 2.1: Ensure political commitment with adequate resources and effective management for TB prevention care and control	Update national strategic plans for TB prevention, care and control	7.2.1
		Mobilize adequate resources for the implementation of the national strategic plan	
		Strengthen programme management capacity at all levels	
	Strategy 2.2: Contribute to strengthen health systems	Strengthen government stewardship	7.2.2
		Strengthen human resource development	
		Scale up implement comprehensive infection control measures in health-care facilities	
		Strengthen management of anti-TB medicines	
		Strengthen the TB surveillance systems including new standards and benchmarks	
		Improve TB prevention, care and control in the penitentiary services and other non-MOH health services	
	Strategy 2.3: Improved regulatory frameworks including universal health coverage policy	Move with urgency to universal health coverage including equitable and full access to TB specific tests and treatment, minimizing geographical and financial barriers to services	7.2.3
		Enforce mandatory notification of tuberculosis cases	
		Ensure recording of tuberculosis deaths within vital registration systems	
		Regulate the production, quality and use of tuberculosis diagnostics and anti-TB medicines	
		Develop legal frameworks for cross-border TB prevention, care and control through interministerial and intersectoral approaches	
	Strategy 2.4: Engage communities, civil society organizations and all public and private care providers	Engage civil society organizations such as NGOs and CBOs in community-based TB prevention, care and control services	7.2.4
		Scale up public-private and public-public mix approaches and promote the International Standards for Tuberculosis Care	

Strategic directions	Strategies	Key interventions	Section
	Strategy 2.5: Address social protection, poverty alleviation and actions on other determinants of tuberculosis	Expand coverage of social protection schemes to cover needs associated with tuberculosis beyond free diagnosis and treatment	7.2.5
		Address poverty and related risk factors through "health–in–all policies" approaches	
Strategic Direction 3: Intensified research and innovation	Strategy 3.1: Implement research to optimize implementation and impact, and promote innovation:	Create a research-enabling environment	7.3.1
		Establish mechanisms for collaboration in planning and implementation of research activities among all stakeholders	
		Ensure that results of operational research and other studies are included in the development of TB control policies on a continuous basis	

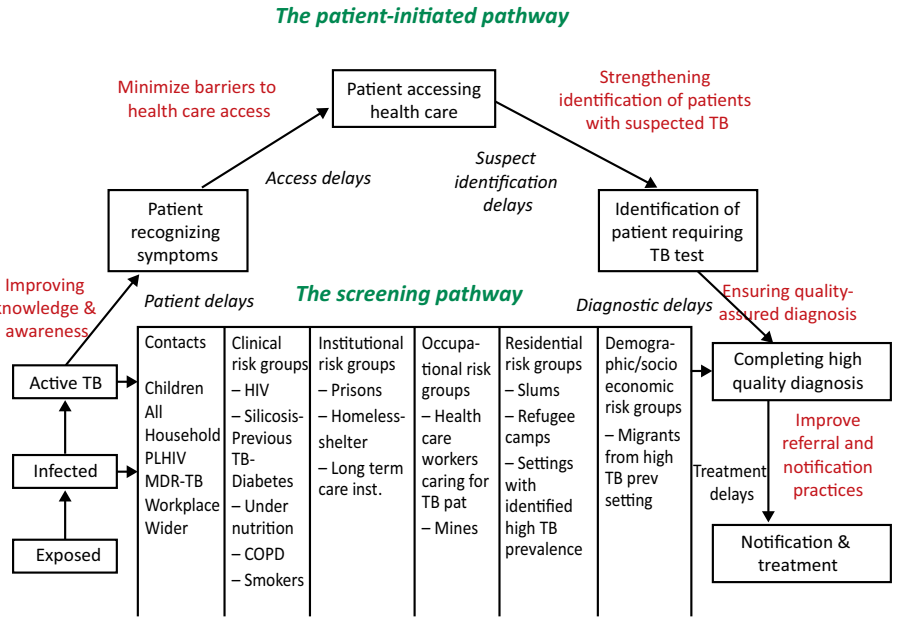
7.1 Strategic direction 1: Integrated patient-centred care and prevention

This strategic direction focuses on early detection and diagnosis, treatment and prevention for all people with TB including children. The aim is to ensure that all people with TB not only have equal, unhindered access to affordable services but also engage in their care.

Countries in the Region need to continue and intensify efforts to strengthen the capacity of the public health system as well as of private providers to provide high-quality services for early and intensified case identification, notification and treatment. This includes efforts to improve the quality and capacity of health workers and private providers 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 women and young children, the urban and rural poor, homeless and slum populations, contacts of TB cases, migrants and internally displaced populations, prisoners, alcohol users, drug users, smokers and people with diabetes.

Ensuring that all health-care providers, whether individual private practitioners, NGOs or hospitals (public and private) provide quality TB care based on national guidelines is a major challenge in the Region. Development and implementation of National Standards for Tuberculosis Care should be promoted. Figure 6 provides a framework for analysis and systematic actions to improve early case detection.[10] 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) during its fourth meeting in April 2012.

Figure 11: Framework for analysis and systematic actions to improve early case detection



7.1.1 Strategy 1.1: Early diagnosis of TB, including universal drug susceptibility testing for all people with TB

Improve community awareness of and knowledge about 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

10 *Early detection of tuberculosis – an overview of approaches, guidelines and tools*, World Health Organization 2011 (WHO/HTM/STB/PSI/2011.21).

that people recognize TB symptoms and take appropriate action early to seek care from appropriate health-care providers, public or private. People need to believe that available health-care provides 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. People's health-seeking behaviours are largely influenced by the experiences and attitudes of family, local community and peers. Ensuring client satisfaction is 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.

Minimize barriers to health care

The basic principle for NTPs is to provide all essential diagnostic tests to persons with presumptive TB, as well as the full treatment course, free of charge to TB 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 vouchers 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 ministries for social protection, 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-centred 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 displaces 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 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)[11] can further strengthen public-public, public-private and private-private interventions.

Strengthen identification of people with presumptive TB, including systematic screening for TB among selected high-risk groups[12]

All health staff in all parts of the health system – public and private – 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.

Actively asking all out-patients in primary health-care facilities and hospitals about cough (including those who do not mention cough spontaneously), and other signs and symptoms suggestive of TB 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 out-patient department, who may ask a simple question

11 Or their national adaptations.

12 *Systematic screening for active tuberculosis, principles and recommendations*. World Health Organization, Geneva 2013 ISBN 978 92 4 154860 1.

about cough, fever, night sweats, or weight loss 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 signs and symptoms suggestive of TB (e.g., 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.

Screening for symptoms alone may not suffice; additional screening tools such as chest radiography may facilitate referral for diagnosis of bacteriologically negative TB, extra-pulmonary TB and TB in children.

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 people's 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 6 above). This type of screening needs prioritization based on feasibility and capacity of the health system and other stakeholders to implement screening activities.

Ensure universal access to quality assured diagnosis, including universal drug susceptibility testing and the roll-out of new diagnostics

All national TB control programmes should prioritize the development and expansion of a robust network of TB laboratories that have adequate biosafety standards; use modern methods of diagnosis (including rapid diagnostics); use standard operating procedures (SOPs) and appropriate quality assurance processes; and have qualified and sufficient human resources. These priorities should be comprehensively addressed in national strategic plans.

Optimal quality of sputum smear microscopy should be ensured through internal quality control (IQC) and external quality assessment (EQA) systems. Early diagnosis of TB should include the universal availability of drug susceptibility testing (DST). DST should be done for all persons with bacteriologically confirmed TB.

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 a first diagnostic test, culture and chest X-ray. Culture or Xpert MTB/RIF as a follow-up 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.

Wide introduction of new molecular diagnostic testing platforms will allow early and accurate diagnosis of tuberculosis and drug resistance. It could help diagnose TB patients earlier with less advanced forms of tuberculosis and facilitate early treatment, contributing potentially to decreased disease transmission, reduced case fatality, and prevention of adverse sequelae of the disease.

Introduction of the new molecular diagnostics will require change of diagnostic policies and training at all levels. More sensitive and rapid diagnostics will increase the number of patients with confirmed TB and with drug resistance diagnosed patients.

Development of affordable and sensitive diagnostic tests that are not based on sputum specimens will improve management of TB among children. In the meantime, the approach to diagnosis of TB in children should be based on a thorough assessment of all the evidence derived from a careful history taking (including history of TB contact and symptoms consistent with TB); clinical examination (including growth assessment); tuberculin skin testing; chest X-ray; bacteriological confirmation whenever possible; investigations relevant for suspected pulmonary TB and suspected extra-pulmonary TB; and HIV testing.

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 with 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, police service, etc., are often not 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 implement and enforce mandatory notification of tuberculosis by all care providers diagnosing and treating TB patients.

7.1.2 Strategy 1.2: Ensure equitable access to quality treatment of people with TB including TB resistant to first-line anti-TB medicines, and provide patient support

Treat all forms of TB sensitive to first-line anti-TB medicines

The capacity to treat drug-susceptible TB is well established in Member States in the Region. However, key affected populations that are bacteriologically negative or at high risk of TB (e.g., children, people with HIV and other comorbidities, or extra-pulmonary TB) often have suboptimal treatment uptake, haphazard treatment monitoring and their treatment outcome either much lower or not reported at all (Table 7 and Figure 5). The treatment success rate registered in 2013 in TB patients coinfected with HIV, all types, was only 74%. Any risk groups with suboptimal treatment success should be given priority attention, and national treatment policies and guidelines should be adapted to ensure that all TB-affected populations can be enrolled on effective treatment.

Treat all cases of TB resistant to first-line and second-line anti-TB medicines

Regional progress in access to treatment of TB resistant to first-line anti-TB medicines over the past few years is significant, though still far from the target of universal access. Among the 33 264 laboratory confirmed RR/MDR TB cases reported in 2014, only 28 536 were started on treatment. The treatment success rate on RR/MDR-TB cases started on second-line anti-TB treatment in 2012 was only 49% (Figure 5 above). Common constraints to treatment scale-up include a critical shortage of trained staff, limited market and high price of second-line medications, inadequate number of facilities for treatment and monitoring, incomplete diagnosis of patients and weaknesses in other health service areas required for effective programmatic management of DR-TB (PMDT).

Reaching the regional targets for treatment success will require urgent attention to the health service weaknesses that contribute to patient losses to follow-up, non-adherence to treatment and incomplete reporting of treatment outcomes. In particular, countries need to analyse the reasons for poor treatment outcomes of patients with MDR-TB and intensify measures to improve adherence and monitoring. TB programmes need to apply a package of services for MDR-TB patients that include free anti-TB and ancillary medications, free laboratory testing, enablers and social support and the use of innovative, patient-centred models for care delivery.

Several national policies should be developed to accelerate the progress achieved so far. These include policies to enable access to all drugs needed to design effective treatment regimens for patients with MDR-TB, including those with limited treatment options due to severe patterns of resistance (e.g., compassionate use or patient-named basis, waivers on importation for humanitarian reasons, and registration and use of new drugs (including products with results of phase 2b trials) recommended by WHO for treatment of MDR-TB, and others included in the WHO Essential Medicines List); to prevent the sale over the counter of anti-TB medicines; to limit hospitalization of MDR-TB patients exclusively to those with a medical indication; and to train and retain human resources. The health-care system elements that should be in place for the implementation of this component include a modern laboratory diagnostic network performing drug susceptibility testing, which enables patient enrolment on treatment regimens according to the corresponding drug-resistant pattern; a good-quality clinical and programmatic

management care team operating with a patient-centred approach; hospitals and outpatient departments with proper TB infection control measures in place; a pharmacovigilance system with priority on surveillance of new anti-TB medicines; a network of institutional and community-based palliative and end-of-life care services, especially for patients for whom all treatment options have been exhausted.

Treat all children with TB

The real magnitude of TB in children in the SEA Region is largely unknown, as cases of TB in children are not always reported, and often treated outside of the TB programme in child health services that are not linked to NTP (public or private). In most instances, even if reported, they are not reported in two recommended age bands (0–4 and 5–14). The SEA Region has the highest number of estimated cases of TB in children (340 000) of all WHO Regions. However, the estimates have limitations and the burden of TB in children is likely to be higher. The number of children 0–14 notified in SEAR in 2014 was 168 310. This accounts for only 7% of total notified cases.

Key risk factors for TB in children include: household or other close contact with a case of pulmonary TB (especially smear-positive or culture-positive pulmonary TB); age less than 5 years; HIV infection; and severe malnutrition. Development of affordable and sensitive diagnostic tests that are not based on sputum specimens will improve management of TB among children.

In the meantime, the approach to diagnosis of TB in children should be based on a thorough assessment of all the evidence derived from a careful history taking (including history of TB contact and symptoms consistent with TB); clinical examination (including growth assessment); tuberculin skin testing (if available); chest X-ray; bacteriological confirmation whenever possible (including the use of Xpert MTB/Rif; investigations relevant for presumptive pulmonary TB and presumptive extra-pulmonary TB; and HIV testing.

National TB programmes need to address systematically the challenges of caring for children with TB, and child contacts of adult TB patients. These include developing and using child-friendly formulation of medicines, and family-centred mechanisms for enabling adherence to treatment. TB care (TB and HIV prevention, diagnosis and treatment services including HIV testing, cotrimoxazole preventive therapy, latent TB treatment and antiretroviral therapy) should be integrated within maternal and child health services to enable provision of comprehensive care at the community level. An integrated

family-based approach to TB care would help remove access barriers, reduce delays in diagnosis and improve management of TB in women and children.

Several policies should be developed as a matter of urgency, beginning with the inclusion of childhood TB in the National TB Strategic Plan and in the national TB guidelines, in line with the global policy documents and guidelines.

In high TB and HIV prevalence settings, national policies should promote inclusion of TB prevention, screening, diagnosis and treatment services as a part of the integrated management of pregnancy and child health services and ensure early detection and treatment of TB. Systematic inclusion of these services will reduce the associated maternal and infant mortality and improve obstetric and neonatal outcomes.

Intensified TB screening using the four symptom screening algorithm to rule out active TB, latent TB treatment and infection control should be integrated into the prevention of mother-to-child transmission programmes to ensure prevention, early detection and treatment of TB and HIV- associated TB. Where services for diagnosis and treatment of latent TB infection or active TB are not feasible, a robust referral and feedback mechanism should be established to limit disruption of services to patients and facilitate a seamless continuum of care. Policies are needed to facilitate integration of TB and TB/HIV interventions into the training curriculum of health-care workers involved in delivery of reproductive, maternal, neonatal, child and adolescent health (RMNCAH) services along with the community health workers and birth attendants. Integrated monitoring and evaluation systems (e.g., the Three Interlinked Patient Monitoring System 3ILPMS, recommended by WHO, UNAIDS, UNICEF and the Global Fund, will facilitate integrated patient monitoring and follow-up for HIV, PMTCT and TB care, using standard monitoring indicators. Recording and reporting systems should be further optimised to allow disaggregation of data on TB and HIV-associated TB by sex and age to facilitate assessment of the need and access to TB, HIV and RMNCAH care for women and children.

Key actors to facilitate successful implementation of childhood TB activities include maternal and child health (MCH) and other health services (especially HIV, EPI and nutrition); services that are caring for sick children; services that diagnose and treat children with TB; paediatricians (working in public and private sectors); and paediatric associations.

Ensure patient-centred mechanisms and systems for social and psychological support to patients in need to ensure effective ambulatory treatment adherence including follow-up after treatment

Patient-centred care supports active involvement of patients and their families in the design of care models and in decision-making about individual options for treatment. Patient-centred care means providing care that is respectful of and responsive to individual patient preferences, needs, cultural traditions, personal preferences and values, family situations, social circumstances and lifestyles, and ensuring that patient values guide all clinical decisions. This is fundamental to the successful outcome of treatment.

Supportive treatment supervision by treatment supporters is essential; it helps patients to take their medication regularly and to complete treatment, thus facilitating their cure and preventing the development of drug resistance. Supervision must be carried out in a context-specific and patient-sensitive manner. Patient-centred supervision and support must also help identify and address factors that may lead to treatment interruption. It must help to alleviate stigmatization and discrimination. Patient support needs to extend beyond health facilities to patients' homes, families, workplaces and communities. Treatment and support must also extend beyond cure to address any sequelae associated with tuberculosis. Examples of patient-centred support include: allowing the patient to choose the place of treatment (in a clinic, at community base, at home, etc.); providing information to patients about the nature of the disease, its treatment and infection control measures; providing treatment partners trained by health services and acceptable to the patient; access to social protection, use of information and communication technology for providing information, education and incentives to patients; and the setting up of mechanisms for patient and peer groups to exchange information and experiences.

The systematic implementation of a TB patient-centred approach requires that national TB control programmes establish clear policies giving due priority to the planning and delivery of social support services, including social protection. Social support services may be more effectively delivered by other agencies deeply engaged in communities and/or specializing in social work, within or outside the health sector and active at the community level. Collaborations with local humanitarian organizations and nongovernmental organizations (NGOs) specializing in serving poor communities can be a powerful ally of the national TB programme for the implementation of patient-centred care.

Establish palliative care mechanisms for treatment of those M/XDR-TB patients in need

For those patients for whom treatment alternatives (chemotherapy and/or surgery) have been exhausted, there is a moral obligation to continue providing care through to the end of life. Support in the form of palliative/end-of-life care and proper infection control measures should be in place. Such effective support at the end of life requires a broad multidisciplinary approach that includes the family and makes use of available community resources. It can be successfully implemented even if resources are limited. It can be provided in tertiary care facilities, in hospices, in community health centres and even in the patient's home.

Proper collaboration and coordination of the national TB control programme with other units in the health ministry responsible for cancer or HIV care and with NGOs working in palliative care can facilitate the access to services for MDR-TB patients that otherwise the NTP is not set up to provide. However, the primary responsibility for the care of the patient should remain with the NTP, especially when the patient remains a source of infection.[13],[14]

Several policies should be updated to ensure that palliative and end-of-life care are in place, alongside treatment, should cure be achievable, and until the end of life if not. Existing expertise within palliative care should be used. This will improve the management of problems such as dyspnoea, cachexia and haemoptysis for patients across care settings (including at home), and enhance performance of control programmes.

13 Companion handbook to the WHO guidelines for the programmatic management of drug-resistant tuberculosis. World Health Organization, Geneva, 2014, ISBN 978 92 4 154880 9.

14 Palliative and end-of-life care in the global response to multidrug-resistant tuberculosis; Richard Harding, Kathleen M Foley, Stephen R Connor, , *The Lancet*, Published Online: 11 June 2012.

Table 7: Treatment outcomes expressed as percentage among cases registered in 2012 (RR/MDR-TB) and 2013 by type of cases in Member States of the SEA Region

Country	New and relapse cases registered in 2013 (%)	Previously treated cases, excluding relapse, registered in 2013 (%)	HIV-positive TB cases, all types, registered in 2013 (%)	RR-/MDR-TB cases started on second-line treatment in 2012 (%)	XDR-TB cases started on second-line treatment in 2012 (%)
Bangladesh	93	86	75	72	25
Bhutan	91	60	Na	100	na
Democratic People's Republic of Korea*	92	83	Na	86	na
India	88	66	76	46	32
Indonesia	88	64	49	54	64
Maldives	84	75	Na	50	100
Myanmar	87	71	No data	79	No data
Nepal	91	74	No data	76	No data
Sri Lanka	85	62	24	88	na
Thailand	81	66	67	No data	No data
Timor-Leste	84	91	No data	75	No data
SEAR	**88**	**67**	**74**	**49**	**37**

Source: Global tuberculosis report 2015, World Health Organization, Geneva 2015. ISBN 978 92 4 156505 9.

7.1.3 Strategy 1.3: Scale up TB-HIV collaborative activities

There were an estimated 230 000 new HIV infections in the Region and 190 000 AIDS-related deaths in 2013; new infections declined by over 34% from 2001 to 2013. Women (15 years and above) account for nearly 37% of the total number of PLHIV in the SEA Region. The magnitude of the infection varies, and five countries namely India, Indonesia, Myanmar, Nepal and Thailand together account for almost 99% of the HIV burden in the Region.[15]

15 Global Health Observatory data repository, http://apps.who.int/gho/data/?theme=home&vid=22100.

Table 8: Achievements in TB/HIV collaborative activities in Member States of the SEA Region, 2014

Country	Incidence of HIV-positive TB cases (rate per 100 000, best estimate)	TB patients with known HIV status (%)	Number of HIV positive TB patients identified	HIV positive TB patients on ART (%)	HIV positive TB patients on CPT (%)
Bangladesh	0.36	<1	45	100	100
Bhutan	12	65	7	100	0
Democratic People's Republic of Korea	1.2	0	0	NA	NA
India	8.3	61	44 171	90	93
Indonesia	25	5	2 355	26	41
Maldives	0.09	99	0	0	0
Myanmar	36	40	6 412	36	73
Nepal	5.4	9	369	No data	74
Sri Lanka	0.26	78	21	86	86
Thailand	22	71	6 831	69	64
Timor-Leste	4.9	54	24	100	100
SEAR	11	45	60 235	85	85

Source: Global tuberculosis report 2015, World Health Organization, Geneva 2015.
ISBN 978 92 4 156505 9.

As demonstrated by the data in Table 8, considerable scale-up of collaborative TB/HIV activities with implementation has taken place in a majority of countries in the Region. However, coverage remains suboptimal and collaboration between TB and HIV control programmes needs further strengthening in all Member States to ensure universal HIV counselling and testing for all TB patients, the availability of co-trimoxazole preventive therapy and ART for all eligible TB patients coinfected with HIV as well as INH preventive therapy, and airborne infection control in health-care facilities.[16]

16 *WHO policy on collaborative TB/HIV activities: guidelines for national programmes and other stakeholders*. World Health Organization , Geneva 2012.ISBN 978 92 4 150300 6.

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 is crucial for the successful implementation of the listed interventions.

Member States need to ensure equitable access to quality services by key populations at risk of TB and HIV, such as those who use drugs and who are in prison. In most settings with a concentrated HIV epidemic, the burden of HIV-related TB is often exacerbated, and access to health care is hampered by vertical systems, high incarceration rates, stigma and discrimination. Policies for client-oriented approaches and a comprehensive package of services for such populations should be in place to encourage continued access and adherence. For people who use drugs, the comprehensive package of harm reduction services should be available to include the screening, diagnosis, prevention and care of HIV, TB, viral hepatitis, STIs as well as the provision of opioid substitution, needle and syringe programmes and psycho-social support as necessary. A smooth continuum of care for prisoners should be ensured starting from exit of the civilian health system, to entrance, transfer within, and exit out of the prison system.

Scale up access to HIV testing among TB patients

Countries need to institute national policies to ensure early and prompt detection of HIV-associated TB. These are critical to minimize delay in initiation the life-saving antiretroviral therapy. Routine screening for TB for persons living with HIV using clinical assessment of symptoms and/or other appropriate tools, as well as access to rapid TB diagnostic tools such as Xpert MTB/RIF, preferably at the initial point of care, are important for increased and early detection of HIV-positive TB cases. Similarly, decentralization of HIV testing services to peripheral health facilities including TB facilities and strengthening provider-initiated HIV testing and counselling including in community settings are essential to ensure scale-up of HIV testing services and coverage of all presumptive and diagnosed TB patients.

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

Routine co-trimoxazole preventive therapy should be administered in all HIV-infected patients with active TB disease regardless of CD4 counts. Moreover, HIV programmes and TB-control programmes should establish a system to provide CPT to all eligible people living with HIV who have active TB.

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

Provision of ART needs to be expanded to ensure that all HIV-positive TB patients are enrolled in 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 populations that are most at risk. Early ART is critical both for prevention of TB among PLHIV and to reduce TB-related HIV mortality. ART should be initiated in all HIV-positive TB patients within the first eight weeks of TB treatment initiation, regardless of CD4 count and within 2 weeks for those who are severely immunocompromised. Member States should adopt and implement these policies through decentralization of ART services to the lowest level of health facility and through task shifting. Integration of ART services into TB facilities enhances access to ART services. Provision of early ART to all eligible HIV-infected persons contributes significantly in reducing TB incidence and consequently mortality due to HIV-associated TB.

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

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

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

Treatment of latent TB using WHO-recommended regimens, such as those based on isoniazid, for all eligible PLHIV significantly reduces the incidence of TB. The effect is synergistic and additional to that of ART in preventing progression to active TB. See also strategy 1.5 below.

Scale up implementation of measures for TB infection control in health-care facilities providing services to people living with HIV

People living with HIV are at 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 to 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 (see also strategy 2.2 below).

7.1.4 Strategy 1.4: Ensure screening for and management of comorbidities

Ensure integrated management at primary health-care level of TB comorbidities and noncommunicable diseases of documented risks such as diabetes

Several noncommunicable diseases and other health conditions including diabetes mellitus, silicosis, as well as smoking, harmful alcohol and drug use, malnutrition and a range of immune-compromising disorders and treatments are risk factors for TB. Presence of comorbidities may complicate TB management and result in poor treatment outcomes. Conversely, TB may worsen or complicate management of other diseases.

As part of basic and coordinated clinical management, people diagnosed with TB should be routinely assessed for relevant comorbidities. WHO's Practical Approach to Lung Health (PAL) is an example of promoting TB care as an integral part of management of respiratory illnesses. The local situation should determine which comorbidities should be systematically screened for among people with active TB. In all settings, TB patients should be screened for diabetes and smoking, while screening and management of alcohol and drug use is also relevant in many settings. A national collaborative framework can help integrated management of noncommunicable diseases and communicable diseases including TB.

Undernutrition is both an important risk factor for TB and a common consequence of TB. It is therefore a common comorbid condition for people with active TB and is associated with increased risk of mortality and poor treatment outcomes. All individuals with active TB should receive an assessment of their nutritional status and appropriate counselling based on their nutritional status at diagnosis and throughout treatment. Additional nutritional care and support should be provided according to nutritional status. Persons with severe malnutrition should receive nutritional therapy in line with WHO recommendations for treatment of severe malnutrition in children, adolescents and adults. Nutrition care or management of persons with moderate malnutrition, similarly to other persons with moderate malnutrition,

includes identifying and treating the underlying causes of malnutrition and improving the nutrient intake through education, counselling, food support and other activities.

Routinely assess elderly people attending health services and other institutions

Surveillance data in the SEA Region are suggesting a progressive increase of notification rates from younger to older age groups. The shift of disease burden to older age groups suggests that in the SEA Region, the transmission of TB may be declining and levels of infection in younger age groups may be falling; however, this pattern is less visible among women and variability among countries is still high. The data presented in Figure 12 and Figure 13 show the distribution of all new cases by age and sex in 2013, in the Region as a whole (using data available only); 53% of the cases belonged to the most productive age groups between 15 and 44 years; 50% among males and 59% among females. In terms of rate, the most affected age group is 45 years and above, with the highest rate among men aged 55–64 years (376 per 100 000 population) and more than 65 years (338 per 100 000 population).

Elderly people often have less access to health services, are more likely to present comorbidities and non-classical symptoms of TB. Countries should therefore pay particular attention to strengthen TB prevention, care and control services for the elderly, including identifying cases without symptoms and in the middle-aged and elderly populations.

Figure 12: Age and sex distribution of all notified new TB cases in the SEA Region* (in numbers), 2013

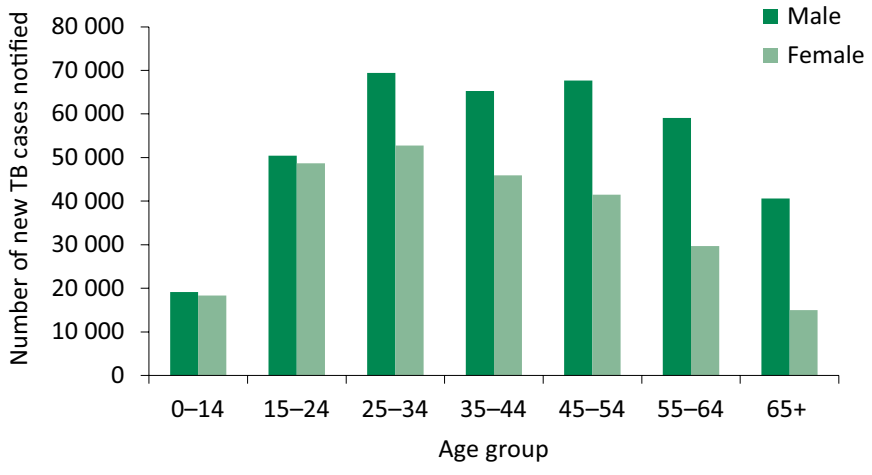
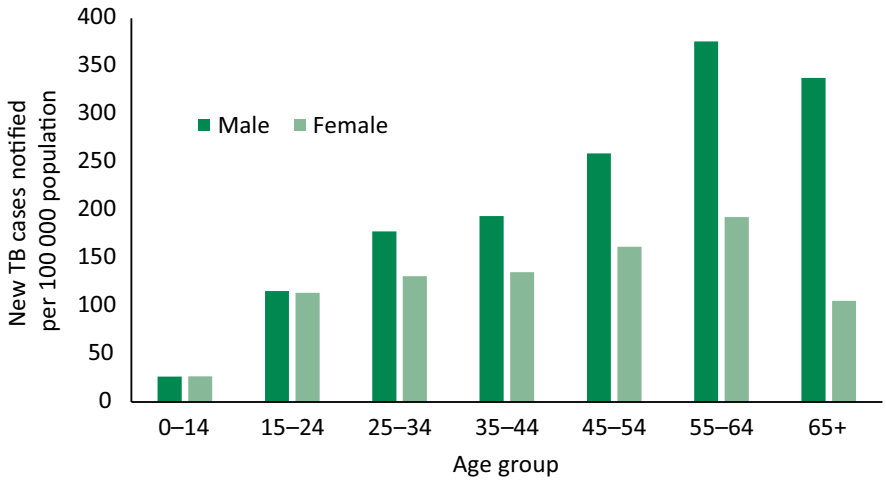


Figure 13: Age and sex distribution of all notified new TB cases in SEA Region* (rate per 100 000), 2013



*Includes only data from Bangladesh, Bhutan, Democratic People's Republic of Korea, Indonesia, Maldives, Nepal and Sri Lanka.

Sources: Annual Reports, National TB programmes, SEAR Member States, 2014.

7.1.5 Strategy 1.5: Ensure preventive treatment of people at high risk and vaccination against TB

Expand preventive treatment of people with high risk of tuberculosis especially children below 5 years of age in close contact with adults affected with TB

Latent TB infection (LTBI) is defined as a state of persistent immune response to stimulation by *Mycobacterium TB* antigens without evidence of clinically manifested active TB. Although the vast majority of infected persons have no signs or symptoms of TB disease and are not infectious, they are at risk for developing active TB disease and becoming infectious in the future. A public health approach to the management of LTBI requires a comprehensive package of interventions including with the development of national policy with adequate allocation of funds, and adaption of WHO guidelines to identify and test individuals who are at a high risk of progression to develop active TB, and delivering of effective and safe treatment to those with a positive test after exclusion of active TB, patient support to ensure high completion rates, and monitoring and evaluation of the process.

In high- and upper-middle income countries with TB incidence less than 100/100 000, systematic testing and treatment of LTBI should be performed in

people living with HIV, adult and child contacts of pulmonary TB cases, patients initiating anti-tumour necrosis factor (TNF) treatment, patients receiving dialysis, patients preparing for organ or hematologic transplantation and patients with silicosis. Systematic testing and treatment of LTBI in prisoners, health workers, and immigrants from high TB-burden countries, homeless persons and people who use illicit drugs should be considered according to local TB epidemiology and availability of resources. In resource-constrained settings, children younger than 5 years of age who are household or close contacts of people with TB and who, after an appropriate clinical evaluation are found not to have active TB, should be treated for presumed LTBI (and all PLHIV, regardless of age). In both low and high TB incidence settings, algorithms should be developed for testing and treatment of eligible people, according to national guidelines, and a recording and reporting system should be adopted. Intervention to promote adherence to testing and treatment should be implemented.

Ensure that WHO recommendations on BCG immunization are implemented through the EPI

BCG (Bacillus Calmette-Guerin) immunization prevents disseminated disease including TB, meningitis and miliary TB, which are associated with high mortality in infants and young children. However, its preventive efficacy against pulmonary TB, which varies among populations, is only about 50%. Until new and more effective vaccines become available, BCG vaccination soon after birth should continue for all infants. However, infants who are known to be HIV infected, with or without signs or reported symptoms of HIV infection, and infants whose HIV infection status is unknown but who have signs or reported symptoms suggestive of HIV infection and who are born to HIV-infected mothers should not be immunized.[17]

7.2 Strategic direction 2: Bold policies and supportive systems

This strategic direction aims at first, strengthening health and social sector policies and systems to prevent and end TB. Second, it supports implementation of universal health coverage, social protection and strengthened regulatory frameworks. Lastly, it addresses the social determinants of TB and TB among vulnerable groups.

17 WEEKLY EPIDEMIOLOGICAL RECORD, NO. 21, 25 MAY 2007 (http://www.who.int/wer/2007/wer8221.pd).

7.2.1 Strategy 2.1: Ensure political commitment with adequate resources and effective management for TB prevention care and control

Update national strategic plans for TB prevention, care and control

The up-to-date national strategic plan (NSP) for TB care and prevention is the fundamental component of a National TB programme's vision and constitutes the backbone to efficiently implement the policies for TB control in Member States. The NSP is the most important strategic document guiding national health authorities in managing and implementing appropriate TB care and prevention activities while being part of a collective movement to meet the overall sustainable development goals beyond 2015 and the ambitious targets set under the End TB Strategy. Countries should review existing plans based on the Regional Strategic Plan to End TB and update as necessary.

The NSP should be ambitious and comprehensive, and incorporate distinct subplans such as: a core plan, a budget plan, a monitoring and evaluation plan, an operational plan, a research plan and a technical assistance plan. It should be based on an assessment of TB epidemiology, health system structure and functions including specific analyses of procurement and supply systems, resource availability (including human resources), regulatory policies, existing links with social services, and the roles of communities, civil society organizations and the private sector.

National planning is likely to be insufficient and ineffective without strong active involvement of all stakeholders, including civil society organizations, affected vulnerable communities or patient organizations, and other stakeholders external to government. This involvement should be ensured from the beginning of the planning process. The partnership effort also needs to extend into the routine practice of local health and social service officials, public health practitioners, implementing partners and researchers. When planning for TB care and prevention in special groups, it is key to involve prison health services, occupational health departments, immigration authorities, special health and social services for vulnerable groups including the homeless, indigenous populations, ethnic minorities at risk, and those social services catering for vulnerable groups. These services need to be considered for the effective planning and execution of TB care and prevention in special groups. Producing joint reports and information materials for these authorities and their constituencies can be valuable.

Periodic meetings of those responsible for domestic TB control and research and leaders financing and supporting TB care and prevention is needed to see the full national impact of response efforts. Establishment of an advisory body that reviews routine performance of national efforts annually and progress towards targets should be considered. It should include relevant authorities, professional societies, researchers and civil society. In some countries, this may be best done through overarching communicable disease bodies if TB is regularly and substantively addressed.

Although Member States in the SEAR have NSPs, countries need to review their plans and determine their needs to update these plans so that the Regional Strategy to end TB can be fully considered.

Mobilize adequate resources for implementation of the national strategic plan

Health systems should raise and secure enough funds for health 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. Member States should:

- Plan the transition to universal coverage in ways that contribute to meeting the needs of the population for quality care; reducing poverty; and 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 patients' out-of-pocket expenditures.

Table 9: General government expenditure on health as a percentage of total government expenditure, and out-of-pocket expenditure on health as a percentage of total expenditure on health, 2013 (see also Figure 6 above)

Country	General government expenditure on health as a percentage of total government expenditure	Out-of-pocket expenditure on health as a percentage of total expenditure on health
Bangladesh	8–11	>45
Bhutan	<8	16–29
Democratic People's Republic of Korea	Data not available	Data not available
India	<8	>45
Indonesia	<8	>45
Maldives	12–14	30–44
Myanmar	<8	>45
Nepal	12–14	>45
Sri Lanka	8–11	>45
Thailand	>15	<15
Timor-Leste	<8	16–29
Cut of points used:	*(<8; 8–11; 12–14; >15)*	*(<15; 15;16–29; 30–44; >45)*

Source: Tracking universal health coverage: first global monitoring report I. World Health Organization, Geneva 2015. http://www.who.int/healthinfo/universal_health_coverage/report/2015/en/.

Strengthen programme management capacity at all levels

The limited leadership and programme management capacity is a constraint, especially at operational levels in both the public and private health sectors. With the implementation of the Regional Strategy to End TB, managers at all levels will face even more complex managerial decisions and challenges. To enable an adequate response to those challenges, competencies, roles and responsibilities should be clearly defined and performance changes measured. Member States need to ensure the following:

- adequate numbers and deployment of managers throughout the health system;
- that managers have appropriate competencies;
- existence of functional critical support systems (to manage funds, staff, information, supplies, etc.);
- 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 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, communications, etc.).

7.2.2 Strategy 2.2: Contribute to strengthening health systems

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 control 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 is essential. Such policies must be backed 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, 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 the community level, the TB programme should help abolish socioeconomic barriers and catastrophic health and social costs that encounter by linking people affected by TB to available social welfare schemes and if required, propose new schemes for their benefit.

Strengthen human resource development

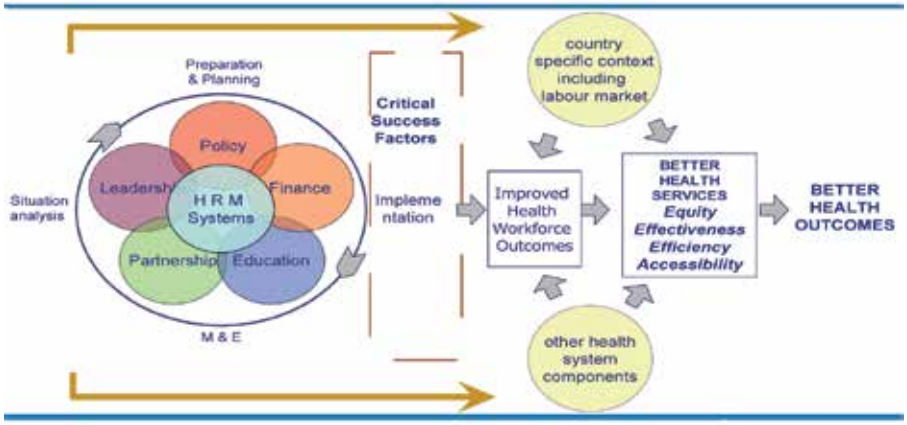
Effective tuberculosis (TB) control including the scaling up of multi/extensively drug-resistant tuberculosis (M/XDR-TB) control depends on timely, adequate, and ongoing hiring, training, deployment, motivation and management of health workers. These measures ensure that all components of the Stop TB 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 constraint to achieving all health-related Millennium Development Goals. This shortage leads to, among other things, an inability by 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.

Member States should develop strategic plans for human resource development (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. Plans should cover the areas of intervention listed in Table 10.

Figure 14: The HRH Action Framework



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

Scale up/implement comprehensive infection control measures in health-care facilities[18]

TB infection control is a combination of measures aimed at minimizing the risk of TB transmission within populations. The foundation of infection control is early and rapid diagnosis, and proper management of TB patients. TB infection control requires and complements implementation of core activities in TB control, HIV control and health-systems strengthening. It should be part of national infection prevention and control policies because it complements such policies – in particular, those that target airborne infections.

All health-care facilities, public and private, caring for TB patients or persons with presumptive TB should implement globally recommended infection control measures. The measures selected will depend on the infection control assessment, which should be based on the local epidemiological, climatic and socioeconomic conditions, as well as the burden of TB, HIV, MDR-TB and XDR-TB.

18 WHO policy on TB infection control WHO policy on TB infection control[this is repeated twice; please clarify] in health-care facilities, congregate settings and households. World Health Organization, 2009 (WHO/HTM/TB/2009.419)

Table 10: The HRH Action Framework: action field, definition and areas of intervention

Action field	Definition	Areas of intervention
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.
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 nonformal 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 multisector and sectorwide collaboration. ▪ Modernizing and strengthening professional associations.
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 retentions, financial and nonfinancial incentives.

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

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 formulations.

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 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 the public and private sectors, and the utilization of antimicrobial agents at various levels; they would need to assess therapeutic and nontherapeutic use in animals and appraise the impact of the promotion of pharmaceuticals. Countries need to promote optimal prescription through:

- 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 drug use feedback form and monitoring efficacy and side effects.
- Ensuring that only quality assured drugs are prescribed.

Resolution WHA62.15 adopted in 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".

Strengthen the TB surveillance systems including new standards and benchmarks

Monitoring and evaluation is essential to document progress and to show whether TB control is having the expected impact on the burden of disease. Reporting of treatment outcomes for all cases (not just those with smear-positive pulmonary TB) should be done using electronic systems for recording and reporting of data wherever possible. Following the recommendations agreed 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 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 comorbidities should also be monitored, as well as indicators of implementation of actions to address them.

By the end of 2014, three countries – Bangladesh, Indonesia and Thailand – successfully used the WHO *Checklist of standards and benchmarks for TB surveillance and vital registration systems* to identify gaps, corrective actions and funds needed to strengthen TB surveillance and VR.

Access to mobile technology is growing fast. As mentioned above, India has 87% of its population living where there is mobile network coverage and has 762 million active mobile connections. mHealth – the use of mobile devices such as mobile phones – offers a wide range of new opportunities for

community-based health services. mHealth has the potential to make a big difference for community-based health care. Although the location may be remote, there can be daily interaction with other health workers; information such as diagnosis and treatment protocols can be stored on one hand-held device; and health information can be transmitted through user-friendly applications in real time from the same device. Stocks can be monitored centrally and (in theory at least) replenishments can be sent out in good time. Some mobile devices can also measure a patient's temperature, rate of breathing, etc.[19]

Improve TB prevention, care and control in the penitentiary services and other non MOH health services

Imprisonment in some settings can be closely related to inadequate judicial and health policies. Factors that contribute to increased morbidity and mortality in these settings include increased prison population rates, delayed legal processes, meager prison budgets that preclude adequate nutrition and access to health services, overcrowded spaces, poor ventilation, violence, and weak or non-existent links to the civilian health sector. TB in prisons affects the general population through transmission that occurs when prisoners are moved (upon being released or transferred to another facility) and via prison staff and visitors—a phenomenon that is better documented and understood now.

The public health strategies to curb TB should be uniform and comprehensive to include prisons, since they are communities that have higher TB prevalence and incidence rates. TB control programmes in prisons need to be established and implemented in collaboration with the NTP and penitentiary health systems; thus, prisons' health services should be integrated into the general health system and the NTP's network for training, supervision, monitoring and evaluation, and laboratory services. NTP should also consider prisons when planning and budgeting. This cooperation would guarantee the application of nationally accepted standard TB control procedures

19 The variety of mHealth activities in South-East Asia is demonstrated by:
- USAID's *Integrating Mobiles into Development Projects* (2014), which lists m-health platforms (mobile applications or services) currently used in South-East Asia and USAID-funded projects, which use mobile applications in the Region.
- The National Health Portal (NHP) of India, which lists apps and software in use in the Indian health sector. Examples include a Safe Pregnancy and Birth app., which includes instructions for CHWs; and the Geochat-Collaboration tool mobile app, which allows chatting, reporting and receiving alerts.

and activities, increase prisoners' access to equitable care, and improve sustainability.

TB control programmes in prisons, as in the general population, should address the distinct characteristics of TB in HIV-infected patients, especially in settings with a high burden of TB and HIV, such as prisons. TB/HIV coinfection rates in prison have been found to be 10% to 20% higher than those found in the civilian population. Basic strategies include improving case detection of TB among people living with HIV, providing IPT for those without active TB, and providing diagnostic counselling and testing for HIV to patients diagnosed with TB. ART is also an important protective factor in coinfected individuals.[20]

7.2.3 Strategy 2.3: Improved regulatory frameworks including universal health coverage policy

Move with urgency to universal health coverage including equitable and full access to TB specific tests and treatment, minimizing geographical and financial barriers to services

Universal health coverage (UHC), defined as "the situation where all people are able to use the quality health services that they need and do not suffer financial hardship paying for them", is achieved through adequate, fair and sustainable prepayment financing of health care with full geographical coverage, combined with effective service quality assurance and monitoring and evaluation.[21] No country in the world has absolute UHC today, but all should be aiming to progress rapidly towards UHC.

People approach health services generally seeking help for an undefined illness. Access barriers to health services therefore are among the first key challenges for early and correct TB diagnosis. For swift initiation of appropriate TB treatment, it is critical that full access to general health services is guaranteed for all, and not just for TB-specific tests and treatments.[22] Geographical and financial barriers for general health service use, such as out-of-pocket expenditure, need to be minimized; systemic changes are needed to overcome these barriers.

20 Guidelines for control of tuberculosis in prisons. Tuberculosis Coalition for Technical Assistance and International Committee of the Red Cross, January 2009. Available at: http://pdf.usaid.gov/pdf_docs/Pnadp462.pdf.

21 World Health Report 2010: health systems financing - the path to universal coverage. Geneva: World Health Organization, 2010.

22 Contributing to health system strengthening –Guiding principles for national tuberculosis programmes. WHO/HTM/TB/2008.400. Geneva: World Health Organization, 2008.

For TB care and prevention, movement towards UHC may mean a context that enables:

- expanding access to the full range of high-quality services recommended in this strategy, as part of general health services;
- expanding the coverage, including costs of consultations and testing, medicines, follow-up tests and all expenditures associated with staying in complete curative or preventive treatment, in public and private sector; and
- expanding access to services for all in need, especially vulnerable groups.

Appropriate TB diagnosis, treatment and prevention should be fully free of charge and this can be achieved within a National Health Service package, or via a national health insurance scheme. Ensuring access and minimizing financial barriers to TB diagnosis and care are not enough. Mechanisms need to be put in place to promote appropriate use of quality-assured medicines and diagnostic technologies, for example, by defining packages of TB diagnosis and treatment within health insurance schemes, and linking quality assurance systems to reimbursement. There are huge opportunities ahead for countries embarking on or scaling up UHC schemes, and there is need in the gestation process that TB care and public health functions are addressed explicitly in the design of systems.

Enforce mandatory notification of tuberculosis cases

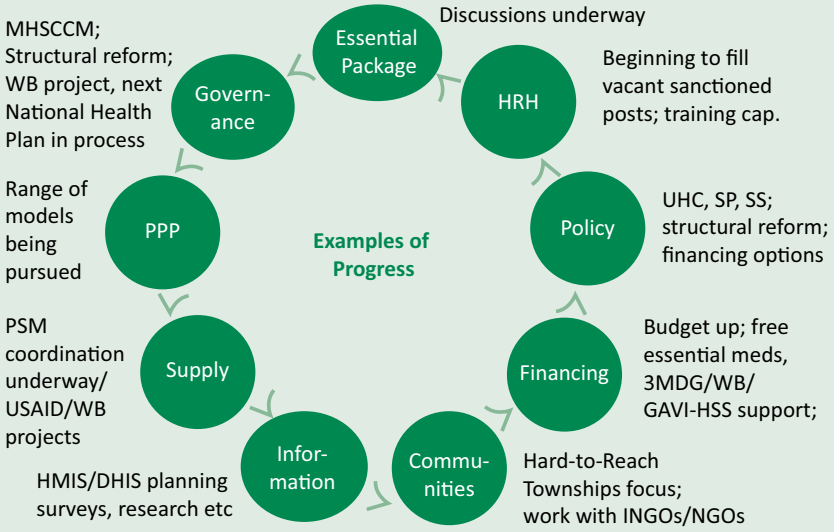
Many TB cases are not notified, especially those managed by private care providers or NGOs that are not linked to national TB programmes. Under-notification of cases hampers disease surveillance, contact investigation, outbreak management, and infection control. An effectively enforced infectious disease law, or equivalent, that includes compulsory notification of TB cases by all health care providers, is essential.[23]

23 Standards and benchmarks for tuberculosis surveillance and vital registration systems: checklist and user guide. (WHO/HTM/TB/2014.02). Geneva, World Health Organization. 2014. Available from: http://www.who.int/iris/bitstream/10665/112673/1/9789241506724_eng.pdf.

Box 3: Myanmar: Nine Strategic Areas for Universal Health Coverage

Since 2011, the government has had a strong vision for achieving UHC, understanding that it is some distance away. It recognized that urgent measures were needed to overcome the retrenchment in coverage that had occurred in the previous 20 years due to the adoption of user fees, and the socioeconomic barriers related to poverty that impeded access to health services. In 2014, the ministry of health (MOH) adopted the vision of achieving UHC "to end poverty, improve human capital and lay the foundation for preventing impoverishing and catastrophic health expenditures". These steps are all in line with the promotion by WHO and the World Bank of actions towards UHC.

The MOH has developed nine strategic areas for UHC, and the JMM found evidence of major streams of work on all nine of these areas (Figure below). All nine are pertinent to the needs of NTP in increasing the capacity of the health system to provide TB services, to expand the range of TB services provided in an integrated fashion, to extend the free coverage of services to all those populations most affected by TB, and reduce the associated costs.



Source: 5th Joint Monitoring Mission for Tuberculosis Control to Myanmar, December 1–12, 2014; Ministry of Health Myanmar and World Health Organization.

Box 4: Mandatory notification of cases in India

The Government of India declared TB as a notifiable disease through a Gazette notification dated 7th May 2012. All public and private health providers are now required to notify TB cases diagnosed and/or treated by them to the District nodal officers. This is an ambitious and desirable initiative that is intended not only to improve epidemiological surveillance but also to extend the range of services available to patients regardless of whether they are registered under the public sector or treated in the private sector. The Revised National TB Control Programme of India (RNTCP) has developed a guide for notification that enables cases to be notified through email, mobile application or paper-based records. The number of health facilities that have registered for notification has been growing steadily, as have the cases notified by the private sector. [add source for this box]

Ensure recording of tuberculosis deaths within vital registration systems

The number of TB deaths per year can be measured if a national vital registration (VR) system (or sample system) capable of providing annual cause of death data (using the ICD-10 coding system) of high quality is in place. Most countries with a high burden of TB do not have comprehensive vital registration systems and the quality of information regarding number of deaths due to TB is often inadequate. However, such systems can be established or existing ones improved. The investments needed to sustain a VR system of the required coverage and quality are estimated at approximately US$ 0.5 per capita, in the areas covered by the system. An effective vital registration system has to be in place to ensure that each death due to TB is properly recorded.[24]

Regulate the production, quality and use of tuberculosis diagnostics and anti-TB medicines

Poor quality TB medicines put patients at great risk. Irrational prescription of treatment regimens leads to poor treatment outcomes and may cause drug resistance. Use of inappropriate diagnostics such as serological tests leads to inaccurate diagnosis. Regulation and adequate resources for enforcement are required for the registration, importation and manufacturing of medical products. There should be regulation of how medical products are subsidized and a determination of which types of health professional are authorized

24 Standards and benchmarks for tuberculosis surveillance and vital registration systems: checklist and user guide. (WHO/HTM/TB/2014.02). Geneva, World Health Organization. 2014. Available from: http://www.who.int/iris/bitstream/10665/112673/1/9789241506724_eng.pdf.

to prescribe or dispense TB medicines. This needs to be supported by proper information about rational use to prescribers and users, as well as by monitoring of use.

Develop legal frameworks for cross-border TB prevention, care and control through interministerial and intersectoral approaches

Cross-border populations are often low-income minorities living near a border and working in the neighbouring country, involving continuous movement across borders. Often, they are skilled temporary migrants performing services abroad without intention or right to settle or seek permanent employment in the host country. These include both legal and undocumented cross-border migrants; manual workers; internal migrants; sex workers; and mobile occupational persons such as truck drivers, crop pickers or traders. Legal groups have access to health care; but more often these people are illegal workers who are excluded from services. Cross-border procurement is important as drug availability could differ across borders. Drugs may be available over the counter, be more affordable or of dubious quality.

Monitoring cross-border minorities increases awareness of TB risks and their sources. Regional strategies providing support from origin to destination are useful: establishing collaborative arrangements among neighbouring NTPs facilitates continuous treatment and support.

Effective TB monitoring in minority groups could provide a basic understanding of the risks and inform targeted TB control activities. NTPs should conduct a rapid assessment of the TB situation in minority groups that will give sufficient information to plan services and, if performed with community involvement, could help overcome some of the resistance and distrust often encountered in these groups. Community participation increases TB awareness and sensitizes the community to TB interventions.[25]

7.2.4 Strategy 2.4: Engage communities, civil society organizations and all public and private care providers

Engage civil society organizations such as NGOs and CBOs in community-based TB prevention, care and control services

The role of community-based organizations (CSOs) will become more critical in terms of establishing, consolidating and scaling up key community linkages

25 Jose I Figueroa-Munoz[I,1]; Pilar Ramon-Pardo, Tuberculosis control in vulnerable groups. Bull World Health Organ vol.86 n.9 Genebra Sep. 2008. Print version ISSN 0042-9686.

with essential services, especially in the underserved, difficult-to-reach areas and with marginalized population groups across countries. Countries should explore all possible opportunities to engage CSOs, nonformal and private health-care providers to promote comprehensive coverage and ensure effective TB prevention, early diagnosis and prompt treatment.

Despite the best efforts of health systems, one third of incident cases of TB in the Region are still either not diagnosed or not reported. This could be because some communities find it hard to access health facilities for reasons that are often social (stigma, discrimination), economic (transport and other costs) or political (cross-border services, particularly for migrants). To reach the unreached, it is necessary to engage civil society organizations such as NGOs and CBOs in integrated, community-based TB services. Some of these organizations work in remote areas with poor and marginalized people, especially women and children. They are able to effectively reach communities who are often excluded from formal health services such as migrants, cross-border populations, slum dwellers, pastoralists, sex workers or people who inject drugs. They can empower people with TB and their communities through partnerships and effective social mobilization, which will be crucial for transforming the TB response. Community-based health workers (CHWs) and volunteers (CVs), often supported by these NGOs and CBOs, can integrate TB services into their existing portfolios of work such as in HIV, and reproductive, maternal, newborn, child, and adolescent health (RMNCAH) and other spheres of health and development. Integrating TB activities such as community-based screening, contact tracing, referrals, treatment adherence support, social and livelihood support, and stigma reduction into the work of these CHWs and CVs will help reach the unreached and achieve the milestones for 2025 and targets for 2035.

Scale up public-private and public-public mix approaches and promote the International Standards for Tuberculosis Care

All countries in South-East Asia have been implementing public-private mix (PPM) interventions to scale up involvement of divers care providers. However, progress within and across countries has been uneven. Medical college involvement in India, hospital-DOTS linkages in Indonesia, private practitioner involvement in Myanmar and engagement of large NGOs and the small businesses sector in Bangladesh have all contributed impressively to expanding access to quality TB care with adaptable lessons for all countries in the Region. Countries have generally experienced greatest difficulties in engaging the unorganized and unregulated private practitioners, qualified and

nonqualified – often the first contact of people seeking care for symptoms of TB. There is considerable scope also for engagement of private providers in the management of drug-resistant TB.

Given the size and complexity of the problem, the attention, investments and inputs on the part of the national TB programmes in the Region to scaling up even working PPM models have been largely inadequate. In many countries, public and private hospitals that attract a large number of people with TB do not contribute optimally to the detection and treatment of TB; a large proportion of voluntary health organizations and private providers do not yet collaborate with NTPs and continue to provide uneven care; workplace TB programmes are few and far between; large quantities of TB medicines of questionable quality are sold in private retail pharmacies, and investments in scaling up PPM rarely match the real needs.

However, the global push to intensify TB case detection has also led to development of innovative models of engaging private providers. Some of these, such as social franchising, have been in place for several years; a newer market-sensitive, social enterprise model has also produced impressive results in some settings. In countries with a large private sector such as India, Indonesia and Myanmar, almost every fifth to every fourth case is notified by private and non-NTP public providers linked through diverse approaches. Some recently established innovative PPM projects in India, which have used call centres and digital tools to facilitate case notification and treatment adherence among patients in private clinics, have shown impressive results.

However, with the persistent gaps in reporting of detected TB cases, questionable standards of treatment outside NTPs and the ambitious targets set under the Regional Strategic plan to End TB, the engagement of all care providers – public, voluntary, private, corporate – in TB care provision needs to be substantially increased. The policies that need to be in place to enable engagement of all care providers will vary according to country contexts. However, depending on the country situation, the following policies and regulatory frameworks should be considered:

- An explicit policy requiring engagement of relevant public and private providers in contributing to the NTP goals and objectives. This will be essential to mobilize resources, human and financial, to scale up PPM programmes.

- Clear national guidelines and practical tools to engage all public and private providers considering that a wide array of care providers – from traditional healers to chest physicians – cater to people with TB including the very poor.
- National Standards of TB Care in line with the International Standards of TB Care available to all providers with guidance on how to put them in practice and the support available from NTPs.
- Certification/accreditation systems to identify, equip, incentivise and link providers to NTPs and enable them to provide quality TB care to their patients free of charge.
- Policies to bring TB patients and providers in the private sector under the umbrella of UHC and social protection.
- Policies to apply information and communication technology (e/mHealth) to TB care.
- Mandatory TB case notification by all care providers.
- Restrictions on irrational sale and use of anti-TB drugs.
- Sustainable financing of PPM interventions.

It is also essential to strengthen collaboration with regulatory authorities to enact and/or strictly enforce regulations related to mandatory TB case notification and rational use of TB medicines available in private pharmacies.

7.2.5 Strategy 2.5: Address social protection, poverty alleviation and actions on other determinants of tuberculosis

Expand coverage of social protection schemes to cover needs associated with tuberculosis beyond free diagnosis and treatment

Social protection has been defined as 'the set of all initiatives, both formal and informal, that provide: social assistance to extremely poor individuals and households; social services to special groups who need special care and access to basic services that would be otherwise denied; social insurance to protect people against the risk and consequences of livelihood shocks; and social equity to protect people against social risks such as discrimination or abuse'.

A large proportion of people with TB and their households face severe financial hardship related to the direct and indirect costs of illness and health

care including income loss, health-care costs and transport expenses.[26] Adverse social consequences may include stigmatization and social isolation, interruption of studies, loss of employment, or divorce. The negative consequences often extend to the family of the persons ill with TB. Even when TB diagnosis and treatment is offered free of charge, social protection measures are needed to alleviate the burden of income loss and nonmedical costs of seeking and staying in care. Social protection should cover the special needs associated with TB through the following policies:

- schemes for compensating the financial burden associated with illness such as sickness insurance, disability pension, social welfare payments, other cash transfers, travel or food vouchers or food packages;
- legislation to protect people with TB from discrimination such as expulsion from workplaces, educational or health institutions, transport systems or housing; and
- instruments to protect and promote human rights, including addressing stigma and discrimination, with special attention to gender, ethnicity and protection of vulnerable groups.

Address poverty and related risk factors through "health-in-all-policies" approaches

Poverty is a powerful determinant of TB. Crowded and poorly ventilated living and working environments often associated with poverty constitute direct risk factors for TB transmission. Undernutrition is an important risk factor for developing active disease. Poverty is also associated with poor general health knowledge and a lack of empowerment to act on health knowledge, which leads to risk of exposure to several TB risk factors, such as HIV, smoking and alcohol abuse. Poverty alleviation reduces the risk of TB transmission and the risk of progression from infection to disease. It also helps to improve access to health services and adherence to recommended treatment. Actions on the determinants of ill health through "health-in-all-policies" approaches will immensely benefit TB care and prevention.[27] The required social, economic and public health policies include those that:

26 Tanimura T, Jaramillo E, Weil D, Raviglione M, Lönnroth K. Financial burden for tuberculosis patients in low- and middle-income countries – a systematic review. ERJ 2014; 2014; 43: 1763–1775.

27 Lönnroth K, Jaramillo E, Williams BG, Dye C, Raviglione M. Tuberculosis - the role of risk factors and social determinants. In: Blas E, Sivasankara Kurup A (Eds). Equity, social determinants and public health programmes: World Health Organization, 2010.

- pursue overarching poverty reduction strategies and expanding social protection;
- reduce food insecurity;
- improve living and working conditions;
- improve environment and living conditions in prisons and other congregate settings;
- address the social, financial and health situation of migrants; and promote healthy diets and lifestyles, including reduction of smoking and harmful use of alcohol and drugs.

7.3 Strategic direction 3: Intensified research and innovation

The aim of this strategic direction is to intensify research including operational research and the adaptation and roll-out of new tools in Member States.

7.3.1 Strategy 3.1: Implement research to optimize implementation and impact, and promote innovation

Create a research-enabling environment

To achieve the targets set for the End TB Strategy in 2035, there is a need for intensified research to deliver new tools and strategies to combat the disease, including rapid and sensitive point-of-care diagnostic tests, short regimens for the treatment of TB disease and latent TB infection, and an effective vaccine. These novel tools, as well as any innovation, must be linked with relevant epidemiological, health system and operational research to ensure their adoption and implementation to scale.

To strengthening TB research in low- and middle-income countries most affected by TB, there is a need to empower a strong and self-sustaining TB research community that addresses national priorities and that is linked with regional and international networks of research.

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 Regional Strategy to End TB 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.

A broad-based, concerted effort is needed to develop research capacity, allocate appropriate resources, and encourage stakeholders to work together. An enabling environment for performing programme-based research and translating results into policy and practice is necessary to achieving the full potential of tuberculosis control programmes.

Establish mechanisms for collaboration in planning and implementation of research activities among all stakeholders

It is essential to develop and strengthen mechanisms for collaboration in planning and implementation among all stakeholders at national levels, such as a national TB research network(s) that includes researchers, public health officers, programme managers, donors, technical assistance institutions and advocacy groups, and those that have links with international stakeholders. These groups should subsequently elaborate a national TB research plan as part of a relevant ongoing research plan including:

(1) Develop country-specific TB research priorities based on understanding of the current TB epidemic, health system and research capacity at the country level.

(2) Plan for relevant training and capacity-building, including developing researchers and research careers from an early stage.

(3) Ensure that adequate funding is provided for training, infrastructure and research operations.

(4) Establish mechanisms for ongoing monitoring and evaluation of the implementation of the TB research plan.

(5) Advocate for public support and funding of TB research. This essential activity step must be initiated early and continued throughout all phases of the TB research plan.

Ensure that results of operational research and other studies are included in the development of TB control policies on a continuous basis

Most innovations cannot be translated into effective local action without careful planning and adaptation, and partnership with stakeholders. In addition to routine surveillance, well-planned and well-conducted research is required to assess national and local epidemiological and health system situations, sociobehavioural aspects of health-care seeking, adherence to treatment, stigmatization and discrimination, and to evaluate different implementation models.

8. Cost of planned TB control activities in the Region 2016–2020

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 and as mentioned in section 3.2 above, all but one of the countries in the SEAR currently have active grants from the Global Fund totaling over US$ 1 billion, not including health system strengthening and TB-HIV components. USAID is proving financial support to Bangladesh, Indonesia, and Myanmar and Thailand. 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 comorbidities, all pose major challenges to TB control programmes.

Table 11 shows NTP budgets, available funding, and gaps in 2015 (US$ million). There are still considerable uncertainties regarding existing estimates of resource requirements and funding gaps. Additional resources through increased allocations from national budgets and external sources will need to be sought to sustain TB control programmes over the next 10 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 11: Financing TB control, 2015

Country	Total budget (US$ million)	Funded domestically (%)	Funded internationally (%)	Unfunded (%)
Bangladesh	48	<1	70	30
Bhutan	No data	No data	No data	No data
Demcoratic People's Republic of Korea	27	20	33	48
India	261	46	54	0
Indonesia	133	13	21	66
Maldives	<1	100	0	0
Myanmar	36	11	67	22
Nepal	15	56	43	1
Sri Lanka	17	73	21	6
Thailand	32	52	11	37
Timor-Leste	1.6	27	73	0

Source: Global tuberculosis report 2015, World Health Organization, Geneva 2015.
ISBN 978 92 4 156505 9

9. Adapting and implementing the strategy

The Regional Strategic Plan to End TB in the SEAR 2016–2020 brings a new flexibility with subsequent needs for adaptation at the country level, including needs for strategic management, coordination and collaboration within and beyond the health sector. However, the Regional Strategy cannot be applied similarly to all Member States in the Region.

NTPs need to review and modify as needed the National TB Strategic Plan in line with the new strategy and the new Sustainable Development Goals. This will require defining the current status of the various interventions listed under the strategic directions and subsequent strategies of the Regional Strategic Plan. For this purpose, some baseline assessments and preparations might need to be undertaken. Comprehensive health system and epidemiological assessments should provide insights into the current, overall state of affairs. They should help identify the places with poor access to services, and populations at risk that need to be prioritized for speedy attention. Baseline assessments should throw light not only on TB-specific interventions such as the coverage of new TB diagnostics or that of treatment for drug-resistant TB but also on the general health and social sector initiatives to understand the place of TB in, for example, health-related regulatory frameworks, the national plan for universal health coverage and various social welfare schemes.

Implementing the Regional Strategic Plan towards End TB 2016–2020 will require intensified actions elaborated under the three strategic directions of the strategy from three levels of governance in close collaboration with all stakeholders. The three levels include the NTP, the national health ministry, and higher levels in the national government responsible for setting the social development agenda, resource allocation and interministerial coordination. NTPs should be responsible for coordination of all activities related to delivery of services for TB care and prevention. The national health ministries should provide critical systemic support, enforce regulatory mechanisms and coordinate integrated approaches through interministerial and intersectoral collaboration. National governments should provide the overall stewardship to keep tuberculosis elimination high on the development agenda through political commitment, investments and oversight, while making rapid progress towards universal health coverage and social protection. This is also captured in the four cross-cutting principles of the strategy.

Member States should establish a high-level national mechanism involving actors within and beyond the government to effectively coordinate a multisectoral response ensuring the adaptation and implementation of national adaptations of the Regional Strategic Plan towards End TB 2016–2020. The high-level mechanism may be an existing body or a currently working mechanism or a new one put together specifically to achieve the goal of "ending the TB epidemic".

The milestones for 2020, 2025 and the targets for 2035 set out in the new strategy are very ambitious posing major challenges but also opportunities. There is also an urgent need to share experiences and learn from other sectors and interventions, in particularly efforts to manage HIV/AIDS, on how to work effectively in partnerships beyond the health and government sectors.

10. Country support

All 11 Member States in the Region have continued to receive technical assistance through the WHO SEARO and WHO country offices, in coordination and collaboration with international technical partners: the Centres for Disease Control and Prevention (CDC), USA; the Royal Foundation for Tuberculosis in the Netherlands (KNCV); U.S. Agency for International Development (USAID); USAID-supported TBCARE I and II; Foundation for Innovative New Diagnostics (FIND); PATH; the Institute of Tropical Medicine in Antwerp, Belgium; and the UNION.

The three WHO Collaborating Centres, namely, the National TB Institute (NTI), Bangalore, India; the National Institute of Research in Tuberculosis (NIRT), Chennai, India; and the SAARC TB and HIV/AIDS Centre in Kathmandu, Nepal; and technical partners based in countries in the Region also actively provided technical assistance to national TB programmes during 2014. The National Institute of TB and Respiratory Diseases (NITRD), New Delhi, and the All India Institute of Medical Sciences (AIIMS), New Delhi, were recently designated as WHO Collaborating Centres.

Ending the TB epidemic will require long-term combined efforts and close collaboration among multiple stakeholders within and outside the government. Continued strong support from existing and technical partners will be essential if the goals are to be reached.

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Annex 1

Global Tuberculosis Report 2015

Country	Year	Mortality (excluding HIV) Rate (estimates)	Prevalence Rate (estimates)	Incidence (including HIV) all forms Number (thousands)	Incidence (including HIV) Rate	Notified new and relaps Number (thousands)
Bangladesh	1990	80 (53-106)	504 (228-8879	240 (200-310)	226 (183-289)	48 673
	2014	51 (37-68)	404 (211-659)	360 (320 – 410)	227 (200-256)	191 166
Bhutan	1990	277 (191-326)	1760 (827-3040)	4.2 (3.8-4.5)	770 (707-841)	1 154
	2014	9.5 (5.1-15)	190 (75-359)	1.3 (1.1-1.4)	164 (148-181)	1 066
DPRK	1990	110 (105-224)	480 (130-1050)	78 (59-100)	384 (292-515)	No data
	2014	20 (7.9-37)	552 (150-1 210)	110 (100-120)	442 (412-473)	13 045
India	1990	38 (25-54)	465 (415-518)	1 900 (1 700-2 100)	217 (200-242)	1 519 182
	2014	17 (12-27)	195 (131-271)	2 200 (2 000-2 300)	167 (156-179)	1 609 547
Indonesia	1990	70 (47-89)	443 (211-760)	370 (320-440)	206 (177-249)	74 470
	2014	41 (26-59)	647 (513-797)	1 000 000 (700-1 400)	399 (274 546)	322 806

Country	Year	Mortality (excluding HIV) Rate (estimates)	Prevalence Rate (estimates)	Incidence (including HIV) all forms Number (thousands)	Incidence (including HIV) Rate	Notified new and relaps Number (thousands)
Maldives	1990	29 (27-31)	285 (140-480)	0.32 (0.250-0.400)	146 (116-187)	152
	2014	2.3 (1.9-2.8)	56 (25-98)	0.15 (0.13-0.17)	41 (36-47)	131
Myanmar	1990	154 (106-193)	894 (414-1550)	170 (140-200)	395 (341-473)	12 416
	2014	53 (38-70)	457 (352-575)	200 (180-220)	369 (334-406)	138 352
Nepal	1990	52 (32-70)	348 (162-602)	30 (24-38)	164 (133-210)	10 142
	2014	17 (12-24)	215 (102-369)	44 (39-50)	158 (139-178)	35 277
Sri Lanka	1990	7.6 (4.5-12)	111 (57-184)	11 (9.4-15)	66 (54-84)	6 666
	2014	6.1 (4.8-7.6)	99 (51-164)	13 (12-15)	65 (57-73)	9 305
Thailand	1990	19 (6.3-40)	211 (110-346)	78 (70-87)	138 (123-154)	46 510
	2014	11 (5.7-18)	236 (161-326)	120 (61-190)	171 (90-276)	67 722
Timor-Leste	2002	89 (48-145)	809 (381-1390)	4.5 (3.6-5.4)	498 (406-601)	2 760
	2014	94 (66-126)	820 (426-1 340)	5.8 (4.8-6.9)	498 (411-594)	3 657

Rates are per 100 000 population

Annex 2

The 2014 World Health Assembly resolution on TB

SIXTY-SEVENTH WORLD HEALTH ASSEMBLY **WHA67.1**

Agenda item 12.1 **21 May 2014**

Global strategy and targets for tuberculosis prevention, care and control after 2015

The Sixty-seventh World Health Assembly,

Having considered the report on the draft global strategy and targets for tuberculosis prevention, care and control after 2015;

Acknowledging the progress made towards the achievement of Millennium Development Goal 6 (Combat HIV/AIDS, malaria and other diseases) for 2015 following the United Nations Millennium Declaration and related 2015 tuberculosis targets, through the adoption of the DOTS strategy, the Stop TB Strategy and the Global Plan to Stop TB 2006–2015, as well as the financing of national plans based on those frameworks, as called for, inter alia, in resolution WHA60.19 on tuberculosis control;

Concerned by the persisting gaps and the uneven progress made towards current targets, and in addition that some regions, Member States, communities and vulnerable groups require specific strategies and support to accelerate progress in preventing disease and deaths, and to expand access to needed interventions and new tools;

Further concerned that even with significant progress, an estimated three million people who contract tuberculosis each year will not have their disease detected or will not receive appropriate care and treatment;

Cognizant of the serious economic and social consequences of tuberculosis and of the burden borne by many of those affected when seeking care and adhering to tuberculosis treatment;

Considering resolution WHA62.15 on prevention and control of multidrug-resistant tuberculosis and extensively drug-resistant tuberculosis, and its appeal for action; aware that the response to the crisis to date has been

insufficient despite the introduction of new rapid diagnostic tests and efforts to scale up disease management; aware also that the vast majority of those in need still lack access to high-quality prevention, treatment and care services; and alarmed at the grave individual and public health risks posed by multidrug-resistant tuberculosis;

Aware that HIV coinfection is the main reason for the failure to meet tuberculosis control targets in high-HIV prevalence settings and that tuberculosis is a major cause of deaths among people living with HIV, and recognizing the need for substantially enhanced joint action in addressing the dual epidemics of tuberculosis and HIV/AIDS through increasing integration of primary care services in order to improve access to care;

Recognizing that further progress on tuberculosis and other health priorities identified in the United Nations Millennium Declaration must be made in the decades beyond 2015, and that progress on all of those priorities requires overall commitment to health system strengthening and progress towards universal health coverage;

Acknowledging that progress against tuberculosis depends on action within and beyond the health sector in order to address the social and economic determinants of disease, including expansion of social protection and overall poverty reduction;

Guided by resolution WHA61.17 on the health of migrants and its appeal for action, and recognizing the need for increased collaboration between high- and low-incidence countries and regions in strengthening tuberculosis monitoring and control mechanisms, including with regard to the growing mobility of labour;

Noting the need for increased investment in accelerated implementation of innovations at country level as well as in the research and development of new tools for tuberculosis care and prevention that are essential for the elimination of tuberculosis,

1. ADOPTS the global strategy and targets for tuberculosis prevention, care and control after 2015 with:

(1) its bold vision of a world without tuberculosis, and its targets of ending the global tuberculosis epidemic by 2035 through a reduction in tuberculosis deaths by 95% and in tuberculosis incidence by 90% (or to fewer than 10 tuberculosis cases per 100 000 population), and elimination of associated catastrophic costs for tuberculosis-affected households;

(2) its associated milestones for 2020, 2025 and 2030;

(3) its principles addressing: government stewardship and accountability; coalition-building with affected communities and civil society; equity, human rights and ethics; and adaptation to fit the needs of each epidemiological, socioeconomic and health system context;

(4) its three pillars of: integrated, patient-centred care and prevention; bold policies and supportive systems; and intensified research and innovation;

2. URGES all Member States:

(1) to adapt the strategy in line with national priorities and specificities;

(2) to implement, monitor and evaluate the strategy's proposed tuberculosis-specific health sector and multisectoral actions with high-level commitment and adequate financing, taking into account the local settings;

(3) to seek, with the full engagement of a wide range of stakeholders, to prevent the persistence of high incidence rates of tuberculosis within specific communities or geographical settings;

3. INVITES international, regional, national and local partners from within and beyond the health sector to engage in, and support, the implementation of the strategy;

4. REQUESTS the Director-General:

(1) to provide guidance to Member States on how to adapt and operationalize the strategy, including the promotion of cross-border collaboration to address the needs of vulnerable communities, including migrant populations, and the threats posed by drug resistance;

(2) to coordinate and contribute to the implementation of the post-2015 global tuberculosis strategy, working with Member States, the Global Fund to Fight AIDS, Tuberculosis and Malaria, UNITAID and other global and regional financing institutions, as well as all constituencies of the Stop TB Partnership and the additional multisectoral partners required to achieve the goal and objectives of the strategy;

(3) to further develop and update global normative and policy guidance on tuberculosis prevention, care and control, as new evidence is gathered and innovations are developed, adding to the tools and strategic approaches that are available for ending the global epidemic and moving far more rapidly towards tuberculosis elimination;

(4) to support Member States upon request in the adaptation and implementation of the strategy, as well as in the development of nationally appropriate indicators, milestones and targets to contribute to local and global achievement of the 2035 target;

(5) to monitor the implementation of the strategy, and evaluate impact in terms of progress towards set milestones and targets;

(6) to promote the research and knowledge generation required to end the global tuberculosis epidemic and eliminate tuberculosis, including accelerated discovery and development of new or improved diagnostics, treatment and preventive tools, in particular efficient vaccines, and the stimulation of the uptake of resulting innovations;

(7) to promote equitable access to new tools and medical products for the prevention, diagnosis, and treatment of tuberculosis and multidrug-resistant tuberculosis as they become available;

(8) to work with the Stop TB Partnership, including active support of the development of the global investment plan, and, where appropriate, seeking out new partners who can leverage effective commitment and innovation within and beyond the health sector in order to implement the strategy effectively;

(9) to report on the progress achieved to the Seventieth and Seventy-third World Health Assemblies, and at regular intervals thereafter, through the Executive Board.

Sixth plenary meeting, 21 May 2014

A67/VR/6

Annex 3

Bangkok Call for Action on Strengthening of National Public Health Systems for Emerging Health Challenges[28]

We, the participants of the Regional Conference of Parliamentarians on Strengthening of National Public Health Systems for Emerging Health Challenges held in Bangkok, Thailand, from 19-21 March 2012;

(1) Recognize that health is central to development and that 25% of the world's population live in the Member States of the World Health Organization's South-East Asia Region and account for about 30% of the global disease burden;

(2) Acknowledge the significant improvements in the health status of the people of these countries as indicated by increasing life expectancy at birth and decreasing prevalence of communicable diseases like polio, leprosy, tuberculosis and HIV/AIDS;

(3) Recognize the progress that has been recorded in improving the health of women and children although more remains to be done;

(4) Are concerned at the silent epidemic of noncommunicable diseases like diabetes, cardiovascular diseases, chronic respiratory diseases and cancer;

(5) Are concerned about the sky-rocketing costs of medical care and agree that most of our health problems can be prevented by multisectoral action that includes action by governments, industry, private sector, academia, civil society and other stakeholders;

Report of the Regional Conference of Parliamentarians

(6) Agree that for sustainable health development more attention needs to be accorded to community education and empowerment for health promotion and disease prevention;

(7) Note that the Region has the highest level of out-of-pocket and impoverishing health spending and that most countries fall short of the

28 Strengthening of National Public Health Systems for Emerging Health Challenges. Report of the Regional Conference of Parliamentarians Bangkok, Thailand, 19-21 March 2012New Delhi, World Health Organization 2012

recommended 5% of GDP expenditure on health and, further, that a disproportionate share of total health expenditure is on curative care. As a result, the Region has the highest level of out of-pocket and impoverishing health spending;

(8) Recognize the inextricable links between the health of the people and overall socioeconomic development and that the primary health-care approach can be used effectively to ensure equitable health development of all people;

(9) Recognize that efforts at health systems development need to focus further on strengthening public health systems to meet the emerging health challenges including emerging infectious diseases, nutritional disorders, public health emergencies, disasters (both natural and man-made), the noncommunicable diseases epidemic, the health effects of climate change, rapid urbanization and globalization;

(10) Acknowledge that more needs to be done to improve food security, availability of safe drinking water and sanitation facilities and environmental protection in our countries because they have significant impact on the health of the people;

(11) Note that food safety is a growing public health problem. Foodborne diseases as well as chemicals and toxins in food supply have serious public health implications. The full extent of the burden of disease and related costs of unsafe food requires urgent determination;

(12) Acknowledge the critical importance of adequate and balanced investments for strengthening health systems – including health-care infrastructure, human resources for health, health and social protection systems – in order to respond effectively and equitably to the health-care needs of people;

(13) Recognize that effective public health interventions can make a significant contribution to reduction of the disease burden and contribute to a sustained enhancement in the quality of life of our people;

Strengthening of National Public Health Systems for Emerging Health Challenges

We, the participants of the Regional Conference of Parliamentarians on Strengthening of National Public Health Systems for Emerging Health Challenges, call upon our governments, fellow parliamentarians and other partners:

(1) To explore opportunities to strengthen evidence-based national health policies and legislation for health systems strengthening based on primary health-care principles including addressing local needs such as chronic renal disease, thalassaemia, sickle cell anaemia, etc.;

(2) To actively advocate for adequate budgetary allocations for health at national and subnational levels and to ensure that these are appropriately balanced between public health and curative care;

(3) To work towards sustainable universal health coverage that ensures social protection and equity in health particularly for the marginalized, excluded and unreached sections of society;

(4) To use their good offices to give prominence to and include relevant health issues in policies of other related sectors (like education, agriculture, finance, industry, information and technology, animal and livestock, rural development and others) and to actively strengthen mechanisms that facilitate intersectoral action for health;

(5) To advocate for development of needs-based human resources for health (HRH) policies that not only address issues related to the shortage of the public health workforce but take a long-term view to ensure the availability of adequate numbers of well trained, motivated and well-equipped public health personnel like epidemiologists, public health managers, nutritionists, community-based health workers, public health engineers and others;

(6) To proactively engage in national health programmes and campaigns and advocate with their constituents to promote healthy public policies through high-level advocacy and community education and empowerment by raising awareness about health issues and health rights;

(7) To strengthen the national food safety programme with particular emphasis on capacity building in food analysis and foodborne outbreak investigations;

(8) To work towards strengthening accountability mechanisms for public health programmes through involvement of the community;

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(9) To proactively engage the private sector, industry and civil society in public health initiatives; and

(10) To organize national conferences of parliamentarians and other stakeholders to build national consensus on a roadmap for strengthening public health systems to address emerging health challenges.

Annex 4

Top-ten priority indicators (not ranked) for monitoring implementation of the End TB Strategy at global, regional and national levels, with recommended target levels that apply to all countries

	Indicator	Recommended target level*	Main rationale for inclusion in top-ten
1	TB treatment coverage *Number of new and relapse cases that were notified and treated, divided by the estimated number of incident TB cases in the same year, expressed as a percentage.*	≥90%	High-quality TB care is essential to prevent suffering and death from TB and to cut transmission. High coverage of appropriate treatment is a fundamental requirement for achieving the milestones and targets of the End TB Strategy. In combination, it is likely that these 2 indicators will be used as tracer indicators for monitoring progress towards universal health coverage (UHC) within the post-2015 Sustainable Development Goals (SDGs).
2	TB treatment success rate *Percentage of notified TB patients who were successfully treated. The target is for drug-susceptible and drug-resistant TB combined, although outcomes should also be reported separately.*	≥90%	
3	Percentage of TB-affected households that experience catastrophic costs due to TB *Number of people treated for TB (and their households) who incur catastrophic costs (direct and indirect combined), divided by the total number of people treated for TB.*	0%	One of the End TB Strategy's three high-level indicators; a key marker of financial risk protection (one of the two key elements of UHC) and social protection for TB-affected households.
4	Percentage of newly notified TB patients tested using WHO-recommended rapid tests *Number of newly notified TB patients diagnosed with WHO-recommended rapid tests, divided by the total number of newly notified TB patients.*	≥90%	Accurate diagnosis is a fundamental component of TB care. Rapid tests help to ensure early detection and prompt treatment.

	Indicator	Recommended target level*	Main rationale for inclusion in top-ten
5	LTBI treatment coverage *Sum of the number of people living with HIV newly enrolled in HIV care and the number of children who are contacts of cases started on LTBI treatment, divided by the number eligible for treatment, expressed as a percentage.*	≥90%	Treatment for LTBI is the main treatment intervention available to prevent development of active TB disease in those already infected with *M. tuberculosis*.
6	Contact investigation coverage *Number of contacts of people with bacteriologically-confirmed TB cases who were investigated for TB divided by the number eligible, expressed as a percentage.*	≥90%	Contact tracing is a key component of TB prevention, especially in children.
7	DST coverage for TB patients *Number of TB patients with DST results divided by the number of notified cases in the same year, expressed as a percentage. DST coverage includes results from molecular (e.g., Xpert MTB/RIF) as well as conventional phenotypic DST results.*	100%	Testing for drug susceptibility is essential to provide the right treatment for every person diagnosed with TB.
8	Treatment coverage, new TB drugs *Number of TB patients treated with regimens that include new (endorsed after 2010) TB drugs, divided by the number of notified patients eligible for treatment with new TB drugs, expressed as a percentage.*	≥90%	An indicator that is relevant to monitoring the adoption of innovations in all countries. *NB. Indicators related to the development of new tools are needed at global level but are not appropriate for monitoring progress in all countries.*
9	Documentation of HIV status among TB patients *Number of new and relapse TB patients with documented HIV status divided by the number of new and relapse TB patients notified in the same year, expressed as a percentage.*	100%	One of the core global indicators used to monitor collaborative TB/HIV activities. Documentation of HIV status is essential to provide the best care for HIV-positive TB patients, including ART.

	Indicator	Recommended target level*	Main rationale for inclusion in top-ten
10	Case fatality ratio (CFR) *Number of TB deaths (from a national VR system) divided by estimated number of incident cases in the same years, expressed as a percentage.*	≤5%	This is a key indicator for monitoring progress towards 2020 and 2025 milestones. A CFR of 6% is required to achieve the 2025 global milestone for reductions in TB deaths and cases.

*Target level to be reached by 2025 at the latest.

The South-East Asia (SEA) Region of WHO accounts for 41% of the global burden of tuberculosis in terms of disease incidence. In 2014, there was an estimated TB prevalence of 5.4 million and incidence of 4 million, and about 460 000 people died due to the disease in the Region. India and Indonesia have among the largest numbers of cases – 23% and 10% of the global total respectively. The SEA Region has a total of 99 000 estimated MDR-TB cases among notified pulmonary TB cases, accounting for approximately 30% of the world's MDR-TB cases among notified pulmonary TB cases in 2014.

Six of the 30 high MDR-TB-burden countries are in the SEA Region: Bangladesh, Democratic People's Republic of Korea, India, Indonesia, Myanmar and Thailand. An estimated 210 000 cases (5.2%) of the 4 million incident TB cases are HIV-positive. This corresponds to 11 per 100 000 and 5% of all estimated TB incident cases. An estimated 62 000 cases died of HIV-associated TB in 2014.

In alignment with the WHO End-TB Strategy, a new Regional Strategic Plan (2016–2020) has now been developed for TB control in the SEA Region with the vision to have a '*Region free of TB*' with zero death, disease and suffering due to the disease. All Member States can adopt this vision in national strategies and plans. The goal for TB control in the SEA Region is to '*End the TB epidemic in the Region by 2035*' by adopting and adapting the vision, milestones and targets as outlined in the World Health Assembly resolution WHA67.1.

The WHO Regional Office for South-East Asia in coordination with all country offices and national and international partners continues to support all Member States in their efforts to achieve universal health coverage and end the TB epidemic.

World Health Organization
Regional Office for South-East Asia
World Health House
Indraprastha Estate,
Mahatma Gandhi Marg,
New Delhi-110002, India
www.searo.who.int/topics/tuberculosis

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