Well-functioning national control programmes with high cure and detection rates are detecting only low levels of multidrug-resistant tuberculosis. The Region has relatively low levels of multi drug-resistance (MDR) among newly detected cases (2.2%). Among previously treated cases in the Region, MDR-TB rates range from 11-21% (16%). However, given the large numbers of TB cases in SEAR, this translates to 89 000 MDR-TB cases accounting for nearly one fourth of the world’s MDR-TB cases that was estimated to exist among notified cases in 2013.

The bringing together of participants from different countries in the Region allowed sharing and learning from mutual experiences that helped to provide inputs for the programmatic management of drug-resistant tuberculosis in their own countries. The timing was opportune as several countries have included activities to undertake or scale up MDR-TB management within their national plans for TB control and have secured significant funding for these plans during the past year.
Combating Drug-resistant Tuberculosis

Report of a regional workshop
Bangkok, Thailand, 20–23 April 2015
Contents

Abbreviations........................................................................................................................................... v

1. Inaugural session .................................................................................................................................. 1

2. Technical sessions............................................................................................................................... 3
   2.1 Session: Global and Regional responses ......................................................................................... 3
   2.2 Session: Country PMDT expansion plans ...................................................................................... 12
   2.3 Session: Policy and strategy updates on MDR-TB ....................................................................... 15
   2.4 Session: Universal access to MDR-TB services ............................................................................ 20
   2.5 Session: Supporting the scale-up of MDR-TB .............................................................................. 28
   2.6 Session: Assessing the impact of TA and monitoring missions ..................................................... 37
   2.7 Session: Scaling up the treatment and care of drug-resistant TB ................................................. 39

Annexes

1. Opening remarks by Dr Poonam Khetrapal Singh Regional Director, WHO South-East Asia (Read by Ag WR-Thailand) ................................................................................................. 41

2. Agenda................................................................................................................................................. 44

3. List of participants ................................................................................................................................. 46
### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR</td>
<td>adverse drug reaction</td>
</tr>
<tr>
<td>C/DST</td>
<td>Culture and drug-susceptibility testing</td>
</tr>
<tr>
<td>CEM</td>
<td>Cohort Event Monitoring</td>
</tr>
<tr>
<td>c-PMDT</td>
<td>community based programmatic management of drug resistant TB</td>
</tr>
<tr>
<td>DOTS</td>
<td>Directly Observed Therapy – Short course</td>
</tr>
<tr>
<td>DRS</td>
<td>Drug resistance survey</td>
</tr>
<tr>
<td>DST</td>
<td>Drug susceptibility testing</td>
</tr>
<tr>
<td>EPTB</td>
<td>Extra-pulmonary tuberculosis</td>
</tr>
<tr>
<td>FM</td>
<td>Fluorescent microscopy</td>
</tr>
<tr>
<td>GDF</td>
<td>Global TB drug facility</td>
</tr>
<tr>
<td>GDI</td>
<td>Global Drug-resistant TB Initiative</td>
</tr>
<tr>
<td>GF</td>
<td>Global Fund to fight HIV/AIDS, TB and Malaria</td>
</tr>
<tr>
<td>H</td>
<td>Isoniazid</td>
</tr>
<tr>
<td>HIV</td>
<td>Human immune deficiency virus</td>
</tr>
<tr>
<td>KNCV</td>
<td>Royal Dutch Foundation against Tuberculosis</td>
</tr>
<tr>
<td>MDR-TB</td>
<td>Multi drug-resistant tuberculosis</td>
</tr>
<tr>
<td>M&amp;E</td>
<td>Monitoring and Evaluation</td>
</tr>
<tr>
<td>NSP</td>
<td>New Sputum Smear Positive</td>
</tr>
<tr>
<td>NTI</td>
<td>National Tuberculosis Institute</td>
</tr>
<tr>
<td>NTP</td>
<td>National Tuberculosis Programme</td>
</tr>
<tr>
<td>Acronym</td>
<td>Full Form</td>
</tr>
<tr>
<td>---------</td>
<td>-----------</td>
</tr>
<tr>
<td>NGO</td>
<td>Nongovernmental organization</td>
</tr>
<tr>
<td>PCC</td>
<td>Patient-centred care</td>
</tr>
<tr>
<td>PMDT</td>
<td>Programmatic management of drug-resistant tuberculosis</td>
</tr>
<tr>
<td>PPM</td>
<td>Public-Private Mix (may also denote Public-Public and Private-Private Mix)</td>
</tr>
<tr>
<td>PTB</td>
<td>Pulmonary tuberculosis</td>
</tr>
<tr>
<td>OR</td>
<td>Operational Research</td>
</tr>
<tr>
<td>R</td>
<td>Rifampicin</td>
</tr>
<tr>
<td>Rglc</td>
<td>Regional green light committee</td>
</tr>
<tr>
<td>SEAR</td>
<td>WHO South-East Asia Region</td>
</tr>
<tr>
<td>SEARO</td>
<td>WHO Regional Office for South-East Asia</td>
</tr>
<tr>
<td>SLDST</td>
<td>Second-line (anti-TB) drugs susceptibility testing</td>
</tr>
<tr>
<td>TA</td>
<td>Technical assistance</td>
</tr>
<tr>
<td>TB</td>
<td>Tuberculosis</td>
</tr>
<tr>
<td>TBP</td>
<td>Tuberculosis Programme</td>
</tr>
<tr>
<td>TBTEAM</td>
<td>TB Technical Assistance Mechanism</td>
</tr>
<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
<tr>
<td>XDR-TB</td>
<td>Extensively drug-resistant tuberculosis</td>
</tr>
</tbody>
</table>
1. **Inaugural session**

Dr Roderico H. Ofrrin, Ag. World Health Organization (WHO) Representative, Thailand, inaugurated the workshop and delivered inaugural address on behalf of Dr Poonam Khetrapal Singh, Regional Director (RD), WHO South-East Asia Region (WHO-SEAR). In the address, he stated that tuberculosis (TB) is a significant burden in the Region with 38% of global incidence and a 4.5 million pool of TB cases to which 3.5 million are added every year. With persistent efforts of the national programmes in the Member States, there has been a significant decline in prevalence and mortality. However, the incidence of TB has seen only a slow but steady decline. The proportion of multi drug-resistant tuberculosis (MDR-TB) cases is low in the Region, being 2.2% among new cases and 16% among retreatment cases. However, this also totals to an estimated 89,000 MDR-TB cases. Extensively drug-resistant tuberculosis (XDR-TB) has also been reported from six countries, which is a cause of worry. Main reasons for perpetuation of drug resistance include inadequate coverage of basic TB control, lack of complete private sector involvement, lack of social protection, health system weakness, poverty and under-nutrition, and access issues for vulnerable populations. The RD also expressed hope that the workshop will lead to renewed commitment to urgently accelerate efforts in the public and private sectors to achieve universal access to quality assured diagnosis and treatment by all TB patients. This is essential to help achieve the TB elimination target by 2035. (Full text of the speech is available in Annex 1.)

Dr Sombat Thanprasertsuk, representing the Ministry of Health, Thailand, addressed the participants. He reiterated that TB is a leading cause of death in the country and the Region. Underdiagnosis and delay in diagnosis are a few of the key challenges to improving TB control. Globally, there are still 3 million missing cases of TB. WHO has recently launched END TB Strategy that lays renewed emphasis on prevention, treatment and care of TB. Increased use of new diagnostics and addressing treatment gaps will be key to control TB and MDR-TB. However, countries face financial problems as well as health system gaps while implementing the new
strategies. The five priority actions for MDR-TB control as advocated by WHO include:

(1) prevent the development of drug resistance through high-quality treatment of drug-susceptible TB;

(2) expand rapid testing and detection of drug-resistant cases;

(3) provide immediate access to effective treatment and proper care;

(4) prevent transmission through infection control; and

(5) increased political commitment with financing.

Dr Md Khurshid A Hyder, Regional Adviser-TB for the WHO SEAR welcomed all participants and presented the objectives of the workshop as under:

**General:**

To promote universal access to diagnosis and treatment of drug-resistant TB in the Region

**Specific:**

- To review status of drug-resistant TB (MDR and XDR) and national response to its prevention and management.

- To identify challenges and to ensure universal access to high-quality care to all people with drug-resistant TB.

- To identify way forward in Member States and possible support from international partners.

He encouraged participants to make it an interactive ‘get together’ and share experience from respective countries to make it a fruitful exercise.
2. Technical sessions

2.1 Session: Global and Regional responses

*Global situation of MDR-TB: Progress and challenges*

Globally, almost half a million (480 000) new cases emerge with MDR-TB and 210 000 die each year. The proportion of new cases with MDR-TB has not changed much in recent years. However, there are serious epidemics of MDR-TB in some countries. Among new TB cases (that account for most of the global TB burden), an estimated 3.5% have MDR-TB. The proportion is higher among people previously treated for TB, at 21%. The Eastern European and Central Asian countries have the highest levels of MDR-TB, reaching 35% of new cases and >60% among previously treated cases in some settings.

There is progress in the global MDR-TB response: 136 000 cases eligible for MDR-TB treatment were detected in 2013, tripled compared with 52 825 cases detected in 2009. The number of MDR-TB cases enrolled on treatment went up from 30 500 in 2009 to 97 000 in 2013.

Key challenges to the MDR-TB response include:

- Drug susceptibility testing (DST) coverage among TB cases remains low; therefore, only a small proportion of MDR-TB cases is detected and notified.

- Growing gaps between numbers detected and numbers started on treatment, leaving one third of patients diagnosed with MDR-TB not started on MDR-TB treatment in 2013.

- Poor treatment outcomes due to health system weaknesses and inadequate drug regimens. Only 48% treatment success and high unfavourable outcomes for MDR-TB: 24% did not have treatment outcomes/treatment interrupted, 16% died and 12% failed. Treatment success for XDR-TB patients is low, only 20%.

- Insufficient funding to reach the global targets on MDR-TB response.
Five priority actions are urgently needed to address the global MDR-TB crisis:

- Prevent MDR-TB as a first priority through high-quality treatment of drug-susceptible TB.
- Scale up rapid testing and detection of all MDR-TB cases.
- Ensure prompt access to appropriate MDR-TB care (including the innovative diagnostics and new drugs and novel regimens), including adequate supplies of quality drugs and scaled-up country capacity to deliver services (including decentralization of MDR-TB care and engagement of all health-care providers).
- Prevent transmission of MDR-TB through appropriate infection control.
- Underpin and sustain the MDR-TB response through high-level political commitment, strong leadership across multiple governmental sectors, ever-broadening partnerships and financing for care and research.

**Regional situation of MDR-TB: Progress and challenges**

Well-functioning national tuberculosis control programmes (NTPs) in the Region achieving high treatment success rates have resulted in maintaining the slow but steady decline in TB incidence rates during the past decade. This has also led to low levels (2.2, range: 1.6–2.8%) of multi drug-resistance (MDR) among newly detected cases. Among previously treated cases in the Region, MDR-TB rate is estimated to be higher, around 16% (range: 11–21%). However, given the large numbers of TB cases in SEAR, this translates to a total of 89 000 (range: 75 000–100 000) estimated MDR-TB cases among notified pulmonary tuberculosis (PTB) cases, accounting for 30% of the world’s MDR-TB cases in 2013. Four of the 27 high MDR-TB burden countries are in SEAR: Bangladesh, India, Indonesia and Myanmar.

In 2011, WHO Regional Office for South-East Asia (SEARO) published the “South-East-Asia Regional Response Plan for Drug-resistant TB Care and Control” in collaboration with the staff of WHO Country Offices. In 2012, the Regional Green Light Committee (rGLC) was established in the WHO SEARO. The rGLC, also called the Regional Advisory Committee on MDR-
TB, was established to provide clear guidance on new policies and strategies for programmatic management on drug-resistant TB in the countries of the Region. During recent years, steady progress has been made in the Region in detecting MDR-TB cases and initiating them on treatment.

Bangladesh, Democratic People’s Republic of Korea, India, Indonesia, Myanmar, Nepal and Thailand developed clear programmatic management of drug-resistant tuberculosis (PMDT) expansion plans, and other countries included PMDT as a component of the overall National Strategic Plans for TB control. In 2012, Bangladesh initiated Community-based Programmatic Management of MDR-TB (c-PMDT) and in 2014, 316 outpatients DR-TB Teams were formed and 2524 Health-care workers were trained to continue MDR-TB care after initiation of the treatment (4–8 weeks) in the five Chest Disease Hospitals and one nongovernmental organization (NGO) (Damien Foundation) providing MDR-TB care. In India, all 35 states have been providing MDR-TB diagnostic and treatment services since September 2012, and by March 2013 all districts were covered by PMDT services. In Indonesia, by the end of 2014 there were a total of 28 PMDT referral centres, 10 subreferral centres and 777 treatment centres across the country, almost double the coverage in 2013; M/XDR TB interventions include further expansion of PMDT sites, policy for ambulatory treatment, “Borderless Approach” and integration of PMDT services into the National Health Insurance system. In Myanmar, according to the scale-up plan developed for 2011–2015, by the end of 2014, 14 regions/states and 68 townships had diagnostic capacity through Xpert MTB/RIF and MDR-TB treatment centres: there are plans to expand MDR-TB diagnosis, treatment and care to all regions/states by 2016. Nepal has already established ambulatory case management services for MDR-TB throughout the country; currently there are 13 treatment and 73 subtreatment centres offering MDR-TB treatment services through primary health-care services and health facilities managed by other sectors; in 2011, hostels for drug-resistant TB cases were established.

Maldives continues to treat the few cases detected through the National Tuberculosis Institute (NTI) of Bangalore (India) on a case-by-case basis. Bhutan started enrolling cases in 2010 and provides treatment through three referral hospitals. Since 2011, Sri Lanka is enrolling patients that are treated initially at the National Hospital of Respiratory Diseases and then referred for continuation of treatment at the Chest Clinics in their respective districts. In Timor-Leste, there is PMDT in place since 2011: the
treatment is initiated by one NGO inpatient MDR-TB ward in the district of Liquiça and six NGO facilities are providing ambulatory care after the intensive phase. There are five NGOs that support the NTP in identifying TB suspects and referring them to Directly Observed Therapy – Short course (DOTS) facilities for diagnosis and treatment. In Democratic People’s Republic of Korea, the growing number of MDR-TB cases notified and initiated on treatment is showing rapid increase of MDR-TB diagnostic and management capacity. In Thailand, most patients with drug-resistant tuberculosis are diagnosed and managed by university, regional/provincial and some private hospitals (about 100 treatment units throughout the country), which procure second-line (anti-TB) drugs (SLDs) using local resources such as the Government Pharmaceutical Organization.

Treatment success rates for MDR-TB patients enrolled on second-line treatment in 2011 were available for all countries except Thailand, which implemented the R&R system for DR-TB in 2012, and Democratic People’s Republic of Korea and Timor-Leste, which started enrolment of patients in 2012. The average regional treatment success rate was 54% for the 2011 cohort, higher than for the 2010 cohort; at the country level, treatment success rates were ranging between 25% in Maldives and 50% in India to 85% in Bhutan and 83% in Sri Lanka. Among unfavourable treatment outcomes, the death rate was 21%, the highest among all WHO Regions.

XDR-TB has also been reported from six countries (Bangladesh, India, Indonesia, Myanmar, Nepal and Thailand) in the Region. In total, 979 XDR-TB cases were reported in 2013 and 43% of them were started on XDR-TB treatment.

**Progress in rapid diagnostics and recommendations for diagnostic algorithm**

The global priorities for TB care and control are to improve case detection, to detect the cases earlier and to enhance the capacity to diagnose MDR-TB. Alarming increases in MDR-TB incidence, the global emergence of XDR-TB, documented institutional transmission and rapid mortality in patients with MDR-TB or XDR-TB who are coinfected with human immuno deficiency virus (HIV) have highlighted the urgent need for rapid diagnostic methods.
No single diagnostic test currently satisfies all the demands of being “rapid”, “affordable”, and “easy”. The WHO has endorsed the use of commercially available liquid culture systems and molecular line probe assays (LPAs) to rapidly detect MDR-TB; however, due to the tests’ complexity and cost, as well as the need for sophisticated laboratory infrastructure and trained personnel, uptake has been limited in many resource-constrained settings.

The development of the Xpert® MTB/RIF assay for the GeneXpert platform was completed in 2009 and is considered an important breakthrough in the fight against TB. Xpert MTB/RIF detects M. tuberculosis as well as mutation that confer rifampicin (R) resistance using three specific primers and five unique molecular probes to ensure a high degree of specificity. The assay provides results directly from sputum in less than two hours. In December 2010, WHO recommended the use of the Xpert MTB/RIF assay.

Since the time of the initial WHO recommendation of Xpert MTB/RIF in December 2010, 110 high-burden and low/middle-income countries have procured 3553 GeneXpert instruments and 8.8 million Xpert MTB/RIF cartridges in the public sector under concessional pricing as of 30 September 2014. In WHO SEAR, the TB-Xpert Project coordinated by the WHO has been providing approximately 1.4 million Xpert MTB/RIF test cartridges and 237 GeneXpert instruments to 21 recipient countries from 2013 to 2015 (SEAR recipients: Bangladesh, India, Indonesia, Myanmar and Nepal). Other countries are also procuring Xpert MTB/RIF using the Global Fund to fight HIV/AIDS, TB and Malaria (GF) fund money, domestic fund and NGO channels.


As per the new manual, summary of key policy recommendations are as follows:

Using Xpert MTB/RIF to diagnose PTB and R resistance in adults and children
Xpert MTB/RIF should be used rather than conventional microscopy, culture and DST as the initial diagnostic test in adults suspected of having MDR-TB or HIV-associated TB (strong recommendation, high-quality evidence).

Xpert MTB/RIF should be used rather than conventional microscopy, culture and DST as the initial diagnostic test in children suspected of having MDR-TB or HIV-associated TB (strong recommendation, very low-quality evidence).

Xpert MTB/RIF may be used rather than conventional microscopy and culture as the initial diagnostic test in all adults suspected of having TB (conditional recommendation acknowledging resource implications, high-quality evidence).

Xpert MTB/RIF may be used rather than conventional microscopy and culture as the initial diagnostic test in all children suspected of having TB (conditional recommendation acknowledging resource implications, very low-quality evidence).

Xpert MTB/RIF may be used as a follow-on test to microscopy in adults suspected of having TB who are not at risk of MDR-TB or HIV-associated TB, especially when further testing of smear-negative specimens is necessary (conditional recommendation acknowledging resource implications, high-quality evidence).

Using Xpert MTB/RIF to diagnose extra-pulmonary tuberculosis (EPTB) and R resistance in adults and children

Xpert MTB/RIF should be used in preference to conventional microscopy and culture as the initial diagnostic test for cerebrospinal fluid (CSF) specimens from patients suspected of having TB meningitis (strong recommendation given the urgency of rapid diagnosis, very low-quality evidence).

Xpert MTB/RIF may be used as a replacement test for usual practice (including conventional microscopy, culture or histopathology) for testing specific non-respiratory specimens (lymph nodes and other tissues) from patients suspected of having EPTB (conditional recommendation, very low-quality evidence).
The interpretation of Xpert MTB/RIF results and follow-on steps will depend on both the result and the risk group from which the patient originated, based on the risk assessment as outlined below:

In designing appropriate diagnostic algorithm with inclusion of Xpert MTB/RIF, the National Tuberculosis Programme (NTP) needs to develop setting specific, evidence-based and cost-optimized algorithms designed to ensure universal access to high-quality TB, MDR-TB and HIV-related TB diagnosis. Implementation of Xpert MTB/RIF testing should be managed by Ministry of Health (MoH) (NTP) under the national plan with country-specific screening and diagnostic strategies, means for ensuring timely access to quality-assured anti-TB drugs and appropriate care delivery mechanisms.

**Aligning a laboratory expansion plan, case finding strategies and treatment capacity**

In 2013, the number of RR-/MDR-TB cases notified to WHO globally totalled >136,000 (compared with 111,000 in 2012)—an increase of 23% on 2012. However, only about 97,000 TB cases were reported to have started MDR-TB treatment in 2013, or about 45% of the Global Plan target.
for that year. The ratio of enrolled to diagnosed cases was lower than 60% in 10 high MDR-TB burden countries in 2013 and lowest in Myanmar (34%), South Africa (41%) and Tajikistan (30%).

As per the WHO Global TB report 2014, key challenges to the MDR-TB response include growing gaps between the number of MDR-TB cases detected and numbers started on treatment, poor treatment outcomes due to health system weaknesses and inadequate drug regimens, and insufficient funding for care and research. This presentation focused on the growing gap between diagnosed cases and those being reported to be put on treatment.

Some of the key challenges to the alignment of diagnostic and treatment capacity include:

- **Laboratory**
  - laboratory and programme planning done in isolation/in parallel;
  - different location of diagnostic facilities – microscopy/Xpert/C&DST;
  - underestimation of laboratory capacity;
  - health system issues such as the disconnect between laboratory and programme information systems;
  - uneven allocation of resources.

- **Case-finding strategy**
  - clinicians not relying on Xpert/MTB RIF results and waiting for culture and DST results even for patients tested positive for RIF resistance using Xpert/MTB;
  - country guidelines/algorithms not well defined.

- **Treatment capacity**
  - policy of hospitalization in some countries at the beginning of treatment but not enough bed capacity;
  - little counselling or information sharing with patients;
  - need for baseline tests that ‘must’ be completed before start of the treatment.
Possible ways forward are as follows:

- joint planning between laboratory and programme teams;
- formation of steering and monitoring teams at national and subnational levels;
- laboratory networking—preferably electronic;
- interlinking of laboratory and programme information systems;
- balanced resource allocation;
- sensitization of medical and paramedical professionals on diagnostic algorithm in use in the country – internationally recommended guidelines;
- ambulatory treatment and patient support measures should be planned and operationalized;
- certain baseline tests can be completed in parallel – chest X-ray/ECG/Audiometry;
- joint review of laboratory and treatment services.

**Recommendations:**

For NTPs and in-country implementing partners

- Member States need to scale up PMDT activities to improve case notification and enrolment, specifically in high MDR-TB burden countries. The PMDT activities need to be mainstreamed with the NTP with needed focus but should not be implemented as a vertical programme.

- Several countries need strengthening of case-finding activities and to develop clear diagnostic algorithm using recent recommendations issued by WHO regarding rapid diagnostics. The target groups for screening of patients with rapid diagnostic testing need to be clearly prioritized based on the epidemiological context, and available resources and capacity in the country.

- NTPs and partners need to align laboratory expansion plan and information systems with programme activities to reduce gap
between detection and enrolment on treatment. NTPs and in-country partners also need to plan and implement interventions that effectively address barriers preventing enrollment of RR/MDR-TB patients after diagnosis.

- NTPs with support from WHO and partners to develop mechanisms for the maintenance of Xpert/MTB RIF machines within countries. This would include collaboration with in-country authorized service provider(s) and in neighbouring countries where in-country service providers are not there.

For WHO and international partners

- WHO to consider revisiting the list of high TB and MDR-TB burden countries to enable more countries getting requisite priority and hence resource mobilization to combat the problem of TB and MDR-TB. WHO to provide policy updates and operational guidance based on existing published evidence and any changes in the future.

2.2 Session: Country PMDT expansion plans

Summary of country presentations

The scale of problems and size of relative gaps for control of MDR/XDR-TB varies much between the reporting countries of SEAR: Countries with low-case load generally face different challenges and their performance in case holding is usually far better than countries managing large(r) numbers of cases. The main exception among high-burden countries is Bangladesh where the treatment’s success rates among MDR-TB patients using the standard WHO recommended regimen shows a very acceptable (~70%) figure. Generally precise estimations on the DR-TB burden based on a recent drug resistance survey (DRS) is lacking in several SEAR countries. While India has recently launched countrywide DRS, countries such as the Democratic People’s Republic of Korea and Indonesia are planning implementation of nationwide DR surveillance in the near future.

The major common gap is the (large) number of missing MDR cases (gap in case detection), due to challenges in expansion of the laboratory system (including implementation of Xpert), deficiencies in history taking for “new” TB patients and limitations in specimen transfer between health
facilities and centralized laboratories. Also limitations in laboratory capacity and quality are mentioned as a major issue by countries (Democratic People’s Republic of Korea, Bhutan, Bangladesh), while other countries (India, Indonesia) have made good progress in quality assurance for culture and drug-susceptibility testing (C/DST) and are rapidly expanding Xpert implementation. Several countries are struggling with maintenance and calibration of Xpert machines, while others have appointed a commercial authorized service provider taking responsibility for this.

Generally PMDT expansion in SEAR has been limited to the public sector; the private sector plays only a limited role, while in several countries (Bangladesh, India, Indonesia, Myanmar and Thailand) a large proportion of drug-resistant cases are being managed by private doctors and clinics. Most private sector providers are still not notifying drug-resistant cases, not implementing DOT and nonstandardized drug use (not according to international recommendations) is also wide spread. This is a major risk for the spread of XDR; due to the huge size of the private sectors in most large SEAR countries, this is a major challenge to be addressed.

Another gap impeding rapid expansion of PMDT reported by all SEAR countries is the limitation in qualified Human Resources to expand services and gaps in capacity-building. Major issues are the high turn over of trained and qualified staff resulting in training backlog. A few countries (Indonesia, Bangladesh, Thailand) have comprehensive and costed HR plans. Countries with a large private sector conduct several activities for capacity-building of private sector providers (distance learning, CME for TB, engagement of professional societies, etc.) but generally national HR plans do not yet include specific and comprehensive HR interventions for private sector.

Similarly, all countries report challenges related to infection control, in particular for hospitals managing MDR patients.

While patient enrollment of diagnosed MDR-TB cases remains high in Bangladesh, Democratic People’s Republic of Korea and Thailand, in Indonesia the initial defaulter rate remains quite high (around 30% of diagnosed cases not enrolled on treatment).

All SEAR countries have initiated interventions to improve patient support to various extent and different methods: Bangladesh and Indonesia shared lessons learnt on engagement of treatment supporters including community cadres and peer educator groups and also Thailand is stepping
up community support. Democratic People’s Republic of Korea focuses on nutritional support to patients.

Despite substantial Global Fund support, high MDR-TB countries in the Region are still facing considerable funding gaps to fully implement their PMDT expansion plans. Local government commitment to support the PMDT remains very limited in most of the countries, which is a major risk for sustainability. Sri Lanka has a sound government allocation for PMDT.

Promising eHealth and mHealth initiatives are undertaken by some SEAR countries: Introduction of mHealth to monitor DOT of MDR-TB patients by NGO using GPS tracking (Bangladesh), rapid expansion of Xpert in Indonesia and Bangladesh linked to eTB manager (for cartridge monitoring) and SMS alert are some examples. Some pilots are also reportedly underway in India.

**Recommendations:**

For NTPs and in-country implementing partners

- Most countries face financial gaps in PMDT expansion plans. Advocacy for enhanced funding support through domestic sources, the GF and other donors is required by NTPs, WHO and partners.

- MDR-TB programmes need to be mainstreamed into TB control programmes for effective utilization of available resources including financial and human resources, without losing the requisite focus on PMDT.

- All DR-TB cases need to undergo Second-line (anti-TB) drugs susceptibility testing (SLDST). However, SLDST availability is relatively low and available to variable extent in various countries. The capacity for SLDST needs to be strengthened in most countries.

- Successful models of m-health and e-health within the Region like the use of open MRS, patient adherence mechanism through mobile phones and software for drug management should be shared and replicated depending on country context.
Intercountry collaboration required for dealing with TB and MDR-TB among migrants. There needs to be a good information sharing mechanism established for diagnosed cases that do not start/complete treatment and migrate to another country.

In some countries there are several partners supporting the country TB/MDR-TB programme. Strong coordination among partners needs to be established for synergy and to avoid duplication of efforts.

Some countries may need to update PMDT expansion plans as per the recent WHO recommendations on diagnostic algorithm combined with screening tools available in the country.

For WHO and international partners

- Support countries with advocacy activities for resource mobilization through domestic and international sources.
- Sensitisation of the GF Fund Portfolio Managers on flexibility of adoption of WHO guidelines in country context needs to be considered.

2.3 Session: Policy and strategy updates on MDR-TB

*Introduction of new drugs and regimen for MDR-TB*

The key principles stated in the WHO Strategic Plan for rational introduction of new TB drugs and regimens in countries are as follows:

- need for combination regimen(s);
- adaptation to largely variable country settings (health and NTP infrastructure, geography, demography, TB epidemiology, level of preparedness, etc.);
- ensure equitable access to safe and quality-assured new drugs for all patients in needs;
- link with measures to prevent misuse of the drugs; and
- multistage and pluri-partner process.
The five steps for introduction of drugs, as spelt out in the strategic plan are as follows:

- determination of the type of evidence and data to be required by WHO to recommend the use of new drug(s)/regimen(s) for the treatment of TB, and production of technical information notes;
- development of a “Policy Development Framework” to establish recommendation for the introduction of new TB drugs/regimens in countries;
- series of Expert consultations to evaluate new TB drugs/regimens coming out of the pipeline and revise/update treatment guidelines as appropriate;
- recommendations and technical assistance (TA) for the introduction of new TB drugs/regimens in countries; and
- market introduction.


Country preparedness is key to the introduction of new drugs, and it is important to have the necessary background information on the respective Health System and NTP infrastructures, and on the epidemiological data (“know your epidemics”) for effective implementation. The main issues to be addressed include a working mechanism for delivery of drugs, assessment and understanding of risks to individuals adverse drug reactions (ADRs and implications, risk of resistance development, and feasibility of potential public health impact and cost-effectiveness.

WHO has launched a Policy Implementation Package (PIP) for the introduction of new drugs during the Union Conference in October 2014. The goal of the PIP is to support countries in preparing for their introduction of new TB drugs and/or regimens, based on WHO policy guidance, to better serve patients and communities in need. The PIP includes minimum requirements for country preparedness and planning, implementation plan for introduction of new TB drugs or regimens, pharmacovigilance and drug resistance surveillance, private sector engagement, systems approach for ensuring uninterrupted supply of quality-assured medicines and undertaking operational research.
Combating Drug-resistant Tuberculosis

WHO has also issued Interim policy guidance on the use of new drugs (bedaquiline and delamanid): There are five key conditions that need to be taken into consideration for introduction of new drugs:

1. proper selection of patients;
2. patient informed consent required;
3. treatment design based on WHO recommendations;
4. close monitoring conditions;
5. active pharmacovigilance, management of AEs and prevention of drug–drug interactions.

Further details on the subject are available in the Interim policy guidelines for respective drugs issued by WHO.

For introduction of shorter regimen, WHO position statement is available on: http://www.who.int/tb/challenges/mdr/short_regimen_use/en/index.html. Some of the countries that have developed study protocols compliant with WHO position include: Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Côte d’Ivoire, Democratic Republic of the Congo, Guinea, Lao People’s Democratic Republic, Mali, Niger, Rwanda, Senegal, Swaziland and Uzbekistan.

WHO advises countries on a case-by-case basis to introduce shorter regimen, if:

- the project is approved by a national ethics review committee, ahead of patient enrollment;
- treatment is delivered under operational research conditions following international standards to assess the safety and effectiveness of these regimens; and
- the programmatic management of drug-resistant TB and the research project are monitored by an independent monitoring board set up by, and reporting to, WHO.

Countries planning to use short regimens for MDR-TB treatment according to the criteria listed above will be offered assistance to develop the required operational research and programme management capacity if this is not yet available. Support from WHO for such assistance should be sought on a country-by-country basis prior to embarking on the use of short MDR-TB regimens.
Active pharmacovigilance for new drugs and novel regimens for the treatment of MDR-TB

Pharmacovigilance (PV) is defined by the WHO as the “science and activities relating to the detection, assessment, understanding and prevention of adverse effects or any other drug-related problem.” PV is a public health surveillance activity, a fundamental activity to inform the management of patient safety measures in health care.

Cohort event monitoring, a more complete form of active PV is recommended by WHO for the introduction of new, repurposed TB drugs. This recommendation was supported by the independent experts who reviewed the information available on safety of bedaquiline and delamanid in the Guideline Development Group meetings held in 2013 and 2014 respectively. Both of these medicines are still relatively new and only a limited number of patients have been treated with them. In both cases the decision to grant conditional marketing approval by stringent drug regulatory authorities prior to the completion of Phase 3 trials took into account the serious nature of MDR-TB and the unsatisfactory outcomes obtained when regimens composed solely of older second-line drugs are used. All reasonable measures are thus needed to ensure that patient safety is monitored alongside the effectiveness of the treatment.

The implementation of active pharmacovigilance for anti-TB medicines requires close collaboration and leading roles of the national TB programme and the national PV authority. Technical agencies and donors also have important roles in a number of settings to support both NPVs and NTPs to build capacity and promote international standards of Cohort Event Monitoring (CEM).

It is important to ensure that the following essential elements are in place prior to the beginning of the enrollment of patients on a new drug or regimen: (i) a broad agreement between the NTP and the national Pharmacovigilance centre (NPVC) on the process to implement the CEM project for TB drugs; (ii) preparation for the collection of data (e.g. forms); and (iii) staff properly trained to collect the data. Full capacity for CEM could be built over the following months.

With CEM, patients are followed up prospectively in groups and all adverse events are registered at the initiation of treatment, during the treatment and usually for a given time after its end. Data need to be
collected by health-care workers using standard data collection forms and entered in the electronic data collection system at the MDR-TB treatment facilities. The electronic data collection system for CEM requires to be integrated with the existing data collection systems for MDR-TB or PV. Both the NTP and the NPVC should have access to the database. The data analysis, including signal identification and causality assessment should be under the responsibility of NPVC. The national level of (NTP and NPVC) is also responsible for monitoring and reporting on PV for MDR-TB.

To support the implementation of CEM, a set of essential data elements, a sample of schedule for laboratory routine tests, indicators, sample data collection forms, roles and responsibilities of key stakeholders are available in the meeting report of the interregional workshop on PV for TB organized by WHO in Hanoi in November 2014. Online Frequently Asked Questions have been developed to have more clarity on common confusion in PV for TB. All of these documents are available in the meeting report on the WHO web site (http://www.who.int/tb/challenges/pharmacovigilance/en/). In addition to the practical handbook on pharmacovigilance for TB, the Companion Handbook to the WHO PMDT guidelines has been recently updated with the most updated guidance in pharmacovigilance chapter and related annexes.

Best practices in CEM for TB have been demonstrated in Belarus (for TB/HIV, Linezolid and in preparation for the introduction of bedaquiline) and Viet Nam (for MDR-TB patients and in preparation for the introduction of bedaquiline and 9-month regimen).

**Recommendations:**

For NTPs and in-country implementing partners

- Countries planning to introduce new drugs or undertake Operational Research for shorter regimen need to develop plans for the purpose and where necessary, to be technically supported by WHO and partners.

- Pharmacovigilance needs to be introduced and strengthened in all countries and more so in countries introducing new TB drugs and regimen in alignment with WHO policy recommendations.

- Countries to plan for strong data collection (recording and reporting) mechanisms in general and specifically for drug
management including those from subnational storage facilities before embarking on QuanTB or similar software.

For WHO and international partners

- Provide needs-based technical support for undertaking pilots for new drugs and developing operational research (OR) protocols for shorter regimen.

2.4 Session: Universal access to MDR-TB services

Ensuring patient-centred care in TB and MDR-TB

Introduction:

Standard 9 of the International Standards of TB Care (ISTC) states that “Patient-centred approach to treatment should be developed for all patients in order to promote adherence, improve quality of life and relieve suffering. This approach should be based on patients’ needs and mutual respect between the patient and the provider.” Patient-centred care (PCC) through social support is a must in the PMDT. The disease affects the poorest and most marginalized people in society, and aggravates their quality of life and financial situation due to costs in seeking diagnosis and treatment, adverse drug reactions (ADRs), and stigma and discrimination.

A model of PCC was developed in collaboration with the PCC Task Force of the Global Drug-resistant TB Initiative (GDI) with four quadrants representing major points in a patient’s journey from seeking care, diagnosis, treatment and back to the community through engagement, advocacy and policy. PCC is a continuous process that is dynamic, with each part having an effect on the other. Throughout the patient’s journey, social support is upholding human rights, ethical standards and financial risk protection.

Patient-centred care and its role in DOT

DOT increases the chances of treatment completion. PCC approaches enable patients to exercise their rights and responsibilities, and improve their well-being. Concrete ways of PCC include ensuring strict confidentiality when managing TB patients, providing a DOT provider who
is trained and with whom the patient is comfortable, preferably a health worker or community member and not a family member.

**Social support in PMDT**

Social support includes a) informational, b) emotional, c) companionship and d) material support.

*Informational support* is providing the patient and his/her primary caretaker useful information that help him/her solve problems and address sources of stress. This entails training and education about DR-TB and the need for adherence to treatment. Education starts upon diagnosis until the entire course of treatment, and not just when problems arise. This can be provided by a team of doctors, nurses, community health workers and other providers, using materials that are tailored to the patient’s literacy level, age, gender and culture. A prepared checklist of information to give to patients before, during and starting the treatment may be helpful for health workers and community treatment partners, such as the length of treatment, place of treatment, number of pills, who to consult for ADRs, etc. Providing such information will encourage the patient’s participation in his/her treatment and will allow him/her to make goals for cure, and life after cure.

*Emotional support* is any expression of care that contributes to strengthen self-esteem through empathy, trust, encouragement and care. It is beneficial to help patients acquire skills to deal with stigma and discrimination through support groups and one-on-one counselling by trained providers and the medical team.

*Companionship support* is any effort to make patients feel that they belong to the social network that they can rely on for certain needs. It includes peer counselling by cured patients or community champions. The ISTC and Patients’ Charter translated to the local language would make a patient feel that his well-being and daily challenges are important to the health provider.

*Material support* includes all commodities, including finances that a person receives as assistance to deal with day-to-day concerns. At the beginning of the treatment, it will be good to have an assessment of the patient’s means and resources. Basic problems like hunger, homelessness and unemployment are common among TB patients and need to be
addressed through enablers and incentives. These can be in the form of food baskets, transportation allowance or providing income-generating opportunities while patients are undergoing treatment in a centre or on an out-patient basis.

Planning and managing social support, principles include developing a treatment partnership with the patient, 5A’s (assessing, advising, agreeing, assisting and arranging), linking with a DOT provider, supporting patient self-management for his/her personal needs and care, and organizing proactive follow-up care.

In providing social support, there needs to be a system that allows prompt follow-up, through home visits to a missing patient by the health-care provider, management of side effects, counselling, providing enablers, addressing social problems like addiction and involving the family and community leaders.

**Engaging health-care providers in the management of DR-TB**

The current low-case detection of MDR-TB, number of RR/MDR-TB cases detected and reported was only 45% of the estimated among notified TB cases in 2013. This requires acceleration of case detection of DR-TB through activities of identification and referral of patients for DR diagnosis; rollout of diagnostics and expansion of the laboratory network; notification of diagnosed DR-TB cases; and advocacy for funding, political commitment, etc. Case detection and case notification of MDR-TB cannot be optimal without the engagement of all health-care providers in all the above-mentioned activities.

In addition, many RR/MDR-TB patients who were diagnosed but were not enrolled on MDR-TB treatment were 30% in 2013. Among other scenarios happened to these patients, many of them are on the waiting lists for MDR-TB treatment in some settings. Others also seek MDR-TB treatment in health-care facilities outside the NTP but not reported to the NTP. Engagement of non-NTP care providers could help to fill the gaps between the capacity of treatment and diagnosis.

Furthermore, poor treatment outcomes of MDR-TB patients with very high percentage of cases do not know the final treatment outcomes that is “lost follow up” and “not evaluated” combined were 25% in 2011 cohort. Incentives, enablers and PPC need to be strengthened in order to improve
the treatment adherence of MDR-TB patients. These areas are beyond the capacity of NTP in many settings and need more care providers and partners to be involved.

Different tasks and functions in the management of DR-TB can be undertaken by various non-NTP health-care providers depending on interest and capacity. The engagement of providers should not be limited to the clinical tasks/functions but be broader to public health, PPC, advocacy, funding mobilization, regulation and social protection. The NTP and the Public-Private Mix (PPM) DR-TB coordinating body and/or intermediary organization(s) should be responsible for capacity assessment of potential providers and partners prior to engaging them in any activities.

There are different approaches for the engagement of the varied health-care providers in PPM for TB care and control that can be applied for the management of DR-TB. Selection of the appropriate approach(es) depends on the capacity of each care provider with regards to diagnosis, treatment and care of DR-TB; the availability of and access to diagnostics for DR-TB and SLDs for treatment; the infection control conditions of the health-care facility; the willingness of the health-care provider to manage DR-TB cases; available financing mechanisms; and legal frameworks related to health-care provision.

Some recent developments in PPM DR-TB include the development of a national assessment tool, which was tested in four countries between 2013 and 2014, and the development of a guidance document for implementation, which is expected to be published in May 2015. The PPM-DR-TB data collected through the global TB data collection and best practices were presented in the Global TB Report, 2014. In addition to best practices included in the framework document, a WHO web site is being established for submitting and sharing case studies of PPM DR-TB by countries and partners.

Suggested next steps for scale up of the implementation at country level are (i) conducting national assessment on PPM DR-TB using the assessment tool; (ii) developing national scale-up plan of PPM DR-TB as part of the New Sputum Smear Positive (NSP) (mapping potential providers, defining approaches for relevant providers; planning and budgeting activities, mobilizing funds); (iii) development of guidelines/SOPs and tools; and (iv) implementation of planned activities.
Activities need to be done at regional level are (i) provide technical support to countries on planning and implementing PPM DR-TB activities, with high priority for high MDR-TB burden countries; (ii) monitoring and evaluation (M&E); (iii) Support sharing best practices of PPM DR-TB between countries in each region; and (iv) promote PPM DR-TB at regional venues such as regional meetings and conferences.

What need to be done at the global level are (i) develop and update guidance and tools; (ii) collect and share best practices of PPM DR-TB across countries and regions; and (iii) promote PPM DR-TB in different venues of TB and lung diseases (e.g. The Union conferences, ERS Congress).

**Human Resource Development for universal access to MDR-TB services**

The overall goal for Health workforce development or human resource development (HRD) for TB care and control is to reach and sustain a situation where staff at the different levels of health systems have the skills, knowledge and attitude (in other words, are competent) necessary to successfully implement and sustain TB care and control activities including the implementation of new and revised strategies and tools.

HRD is concerned with the different functions involved in planning, managing and supporting the professional development of the health workforce within the health system.

HRD is aiming at getting "the right people, with the right skills and motivation, in the right place, at the right time."

HRD (for the implementation of the Stop TB strategy) refers to the process of planning, managing and supporting the health workforce involved in the delivery of comprehensive TB care and control services, within overall health workforce development.

One of the major bottlenecks to scaling up management of MDR-TB in the 27 high MDR-TB burden countries is the lack of available and trained human resources.

**Challenges:** (1) Staffing issues – no information on trained staff in most of the countries; no criteria for the selection of staff for training, with exception of India, Indonesia, Myanmar and Nepal; no information on staff
requirements in most of the countries; shortage of capacity at national, district levels (management, supervision and trainers); zero growth policy–high turnover; probability of staff underutilization; inadequate district supervision, not enough staff available/trained in supportive supervision. (2) Training issues – little or no follow-up of trained staff or activities in Bangladesh, Nepal, Thailand; no M&E of training programmes; HRD information system in public sector is yet to be established in most of the countries in the Region; pre-service training not accordant with NTP guidelines with exception of India and Indonesia.

What needs to be done…more specific to MDR-TB?

Perform a situational analysis of HR available for NTP in general and MDR-TB specifically where highly trained staff is needed; develop an HRD plan that is harmonized with needs of PMDT expansion plan – including number of staff with specific skills required at the various levels, with job descriptions; conduct competency and skills’ development activities i.e. tailored trainings and workshops. Complemented with supervision and on-the-job training, estimate the funding requirement for the activities.

How to assess and plan for the HRD needs for scaling up management of DR-TB?

Determine roles and responsibilities; determine analyse tasks; develop job descriptions and assign tasks to staff category; do time study (assess time needed to perform task/group of tasks); do workload assessment of new tasks (based on number of patients and other duties); revise assignment of tasks following assessment; assess availability of designated staff categories; determine additional staff needs; ensure availability of additional staff (government? NGO? private sector? contracted staff?); ensure that available staff is competent for assigned tasks (training); supervise, monitor and re-assess and adjust plans.

Why training modules?

Guidelines are not training materials; standardized training contents; adult learning is based on hearing, saying and doing – Case studies, Exercises and Role-plays.
WHO has published generic training modules for the PMDT titled ‘Management of drug-resistant tuberculosis: Training for MDR-TB referral center staff’ (WHO/HTM/TB/2014.15). These modules provide competency-based training of health staff at those facilities where MDR–TB patients are diagnosed and treated. The modules can be used together or individually, depending on the intended audience after adapting these generic training modules to the respective country PMDT guidelines and policy. The modules can be downloaded from the link http://www.who.int/tb/publications/2014/en/.

**PMDT Centres of Excellence (CoE)/Technical Assistance Centers (TAC)**

- Provide assistance to NTP for development of plans (e.g. NSP, PMDT expansion, etc.) and implementation of these plans to the NTPs.
- Support the training of in-country staff to improve the HR base for the expansion of MDR-TB treatment and management.
- Support the NTP in translation and adoption of international guidelines and policy documents as and when required.
- Support the NTP in monitoring PMDT expansion and provide critical inputs for overcoming the challenges.
- Support NTPs in organizing annual PMDT monitoring missions.
- Support and conduct needs-based OR for PMDT expansion.
- Liaise with in–country, international partners and other COEs for information exchange and international TA as and when required.

**Recommendations:**

For NTPs and in-country implementing partners

- Countries are encouraged to strengthen patient-centred initiatives in diagnosis, treatment, care and rehabilitation of MDR-TB patients. Patient support activities have been found useful in treatment adherence but are mostly being funded through GF support. These need to continue and be strengthened. Technical support and published case studies are
available through technical agencies like the Royal Dutch Foundation against Tuberculosis (KNCV) and WHO. Some countries in the Region intend to undertake OR for adaption of WHO guidelines like ambulatory care for MDR-TB patients. There also needs to be greater cross-sectional collaboration within the country among various departments for providing support to the patients.

- Countries need to undertake private sector assessment and need to engage them through various approaches to ensure quality MDR-TB care for all patients. This will also include strengthening drug regulations in countries. Some countries have introduced mandatory notification of TB cases that need to be implemented throughout the country. In other countries with significant private sector, pharmacies can also introduce regulatory mechanism. WHO will publish a framework for involvement of all health-care providers in TB/MDR-TB programme soon that can be used by countries.

- Certification and accreditation mechanisms have successfully been used in some countries without incurring much additional costs. The mechanisms can be adapted in other countries.

- HR planning should align with PMDT expansion plan. Capacity-building of private sector should be included in the plan along with capacity-building of public health sector staff. WHO has recently published training modules for training of staff at MDR-TB management centre. The modules can be adapted by countries for use in local settings.

- Certain HR gaps can be covered by strengthening partnerships in the country and effective civil society engagement.

- Some countries in the Region have good experience of utilizing the insurance mechanism for improved access to DR-TB services. The operational feasibility of universal insurance coverage for DR-TB needs to be explored further in all countries for future sustainability of the PMDT.
For WHO and international partners

- WHO to provide a platform for countries to share/learn from other countries’ experiences and documentation of successful examples:
  - engage a network of community workers to provide supervision of treatment and train on preventing transmission (Bangladesh, Myanmar);
  - incorporate regulation (certification and accreditation) of facilities in PPM (India, Indonesia and Thailand);
  - engagement of pharmacists (Indonesia).

2.5 Session: Supporting the scale-up of MDR-TB

The Global Drug-resistant TB Initiative (GDI) mechanism and activities

A New Global Framework for MDR-TB support was agreed by partners in June 2011, which emphasized increased TA from partners to countries, increased access to high-quality, affordable second-line drugs, strengthened advocacy, decentralization of the global level GLC Initiative to rGLCs and regular and supportive monitoring of country progress. Between January and September 2013, an evaluation of the Tuberculosis Programme (TBP's) Working Groups (WGs) was carried out which recommended that an overhaul of the MDR-TB WG was urgently needed. There was an agreement to combine/merge/integrate the MDR-TB WG and the global Green Light Committee (gGLC), and to establish a new entity to replace the MDR-TB WG. This issue was further discussed at the Joint MDR-TB WG Core Group and gGLC meeting in April 2013. The meeting recommended the following:

- The gGLC and MDR–TB WG Core Group members unanimously and strongly endorsed that the gGLC and MDR-TB WG Secretariats proceed with the preparation of a draft concept document, laying out the terms of reference and operating procedures and election process for a new body based on the Global Laboratory Initiative (GLI) model that will replace the existing gGLC and CG of the MDR-TB WG.
Acknowledging the achievements of the decentralized MDR-TB support framework, the rGLCs should continue as the mechanism for TA, retaining their roles and responsibilities.

GDI was established in October 2013 following broad consultations, culminating in final discussions at the MDR-TB Stakeholders’ meeting in Paris in October 2013, which was attended by nearly 170 participants from national TB control programmes, affected communities, civil society, technical agencies, funding agencies and professional associations.

The GDI was formally launched in January 2014, with its mission being to serve as a multi-institutional, multi-disciplinary platform organizing and coordinating the efforts of stakeholders to assist countries to build capacity for PMDT in the public and private sectors, with an ultimate aim to ensure universal access to care and appropriate treatment for all drug-resistant TB patients.

The strategic priorities for the GDI are as follows:

- build global consensus on management of DR-TB for PCC delivery;
- promote strategies to facilitate patient access to high-quality DR-TB care, through a long-term in-country capacity-building approach targeting both the public and private sectors;
- facilitate integration and coordination of efforts to align diagnostic services for patients with access to high-quality care;
- facilitate strengthening DR-TB reporting and monitoring systems to improve patient notification, drug management, patient records and community-based care through public and private facilities;
- facilitate effective knowledge sharing among partners and harmonize coordination with existing TA mechanisms to ensure quality support to PMDT;
- strengthen regional frameworks and collaboration with rGLCs for support to country level PMDT expansion activities;
- develop targeted advocacy strategies and resource mobilization for DR-TB management scale-up; and
➢ support prioritization of research to generate evidence for PMDT scale-up.

Key activities undertaken by the GDI secretariat so far are as listed below:

(1) Organize monthly GDI CG calls
   - 10 x monthly GDI CG teleconference calls held by March 2015.

(2) Organize ‘Joint Partners forum for strengthening and aligning TB diagnosis and treatment’ from 27 to 30 April 2015
   - Announcements made on GLI and GDI listserv to 300+ subscribers. Around 250 people have already registered.

(3) Publish a GDI newsletter in close coordination with the taskforces
   - Issue 1 of GDI Newsletter published in August 2014.
   - Issue 2 of GDI newsletter will be published in April 2015.

(4) Maintain GDI web pages on the Stop TB web site
   - GDI web pages maintained plan to highlight progress.

(5) Provide support in organizing the meeting for preparing “Costed framework document” to seek innovative funding from the GF and other agencies for MDR-TB scale-up activities
   - Draft “costed frameworks” is prepared and circulated to GDI CG members.

(6) Organize the 2nd GDI CG meeting
   - The 2nd GDI CG meeting was held on 27 October in Barcelona. TF Leaders presented actions taken to date.

(7) Organize a webinar on QuanTB in coordination with the global TB drug facility (GDF)
   - Webinar presentation of Quan TB by Management Health Science (MSH) during CG TC on 4 June 2014.
Work of the three GDI taskforces on PCC, Advocacy and Research:

The PCC taskforce was established with the objectives of identifying gaps and priorities for development of additional practical tools for operationalizing patient-centred PMDT. The taskforce will put together a repository of information and guidance on PCC. The taskforce issued a call for membership through the GDI listserv in August 2014 and held its first teleconference in September. Requisite tools and materials have been gathered and it is expected that the repository will be created by the end of November 2014. A nurse consultant training was held in Manila from 17 to 21 November 2014 in coordination with the WPR rGLC.

The advocacy taskforce aims to promote a world with zero deaths, zero disease and zero suffering from tuberculosis and drug-resistant tuberculosis, as well as reducing the burden of disease in the patient, family and community through the Human Spirits project. It aims to accomplish this goal by messaging through the use of online short films, a comprehensive and informative web site, and using the social media and screenings. The project has developed a key message line – ‘PSSSSSSSSSSST! It’s an emergency!’ The advocacy taskforce has also produced a short advocacy film for screening. The film was screened for the first time in Barcelona immediately after the CG meeting.

The Research taskforce has identified three priority tasks and the progress so far is as below:

- **Task 1:** Develop a prioritized research agenda related to PMDT scale-up. The taskforce is building on the work done by the former MDR–TB research subgroup. Through an announcement on the GDI listserv, a wider range of interested members was recruited to the current work. This was followed by the creation of an inventory of the information yielded by the global consultation for the new global PMDT research agenda conducted from the end of 2013 to early 2014 under the leadership of “Resist TB”. A wide range of resources were consulted including relevant documents produced by CDC, ECDC, MSF, NIAID, Stop TB Partnership and WHO.

- **Task 2:** Preparation of information on ongoing DR-TB research activities. An email group was made of members of the Resist-TB research group (derived from the former research subgroup of
the Stop-TB MDR WG) and all GDI members who expressed interest to the GDI secretariat and/or the TF that they would like to be members of this taskforce, and of individuals suggested by GDI CG members of being involved in PMDT-relevant research. The TF members also crosschecked the results with trial group web sites: RESIST-TB, TB Alliance, TBTC and ACTG.

➢ Task 3: Develop a generic operational research protocol for shorter DR-TB regimens. Chiang Chen-Yuan and Arnaud Trébucq developed the first draft of the protocol. The draft was reviewed by colleagues from MSF, KNCV, WHO and a number of other independent experts. The protocol is not meant to be a handbook or recommendation on shorter regimens, but rather a guidance note with reference to relevant documents.

Role of the Regional Green Light Committee, SEAR

During 2009 and 2010, key stakeholders supporting the expansion of MDR-TB services and care concluded that a revision of the global framework that addresses MDR-TB scale-up was urgently needed. Moreover, support to the scale-up of MDR-TB services "should explicitly shift from a controlling to a supporting mode" to accelerate the number of cases detected, enrolled on treatment and treated successfully, and hence achieve universal access by 2015. WHO headquarters, involving a wide range of stakeholders including WHO headquarters and regional staff, as well as technical partners and countries, developed the new global framework to support the scale-up of MDR-TB services and care, which was endorsed by the Stop TB coordinating Board on 31 March 2011 and the WHO Strategic and Technical Advisory Group for Tuberculosis (STAG) in June 2011.

Under the new framework, decentralized GLCs were recommended to be established at the global level and regional levels to bring GLC activities closer to the countries and benefit from the greater involvement of key national and international partners in the scale-up of MDR-TB services and care in the respective regions. For implementation of the new framework, six regional GLCs housed in WHO AFRO, AMRO/PAHO, EMRO, EURO, SEARO and WPRO respectively have commenced their functions.
RGLC SEAR (also called the Regional Advisory committee on MDR-TB) with its secretariat in WHO SEARO has been established in May 2012 with the following terms of references:

- Review and provide inputs to the regional strategies and/or action plans for the scale-up of PMDT.
- Review and analyse GLC monitoring mission reports and surveillance data.
- Provide an opinion to donors/funding agencies on their request on country PMDT scale-up plans and the subsequent TA needs addressing identified gaps, via the global GLC secretariat (g-GLC) Secretariat.
- Oversee the provision of supportive monitoring missions and TA missions to countries.
- Liaise with the g-GLC and exchange information on plans of the GLC South-East Asia's activities, seek inputs and advice as and when required, and inform the g-GLC of technical and political issues relevant to TB and MDR-TB prevention and control.
- In collaboration with WHO Regional Office and Partners, to convene advocacy efforts for PMDT scale-up, access to and rational use of quality medicines and coordinate and report on progress related to data collection in respective regions.

The first meeting of r-GLC SEAR was held from 21 to 22 May 2012. The meeting selected the Chair of the r-GLC SEAR and discussed and finalized the role and responsibility of r-GLC SEAR including package of services to be delivered to the countries of the Region by the r-GLC mechanism and modus operandi of the r-GLC SEAR. Much effort has been made to combat DR-TB through r-GLC mechanism but still challenges are remaining including insufficient political commitment on PMDT, insufficient disease burden information in the countries, suboptimal implementation of infection control measures, slow and suboptimal engagement of private sectors and community and civil society, and low investment and efforts on research.

In this regard, improved role of r-GLC including the secretariat is required to strengthen r-GLC support to countries, especially four high MDR-TB burden countries, through continuous capacity-building and
active engagement of various stakeholders and improved M&E. Recently independent review of GLC related support at the global level was conducted which recognized importance of r-GLC based technical support provision to the countries and identified some issues which are required to improve the role of r-GLC support including streamlining TAs for PMDT and performance-based approach. It is foreseen that new MoU related with r-GLC supports between WHO and the GF would be finalized soon.

**Key challenges in the supporting countries on PMDT expansion:**

**Technical agency perspective**

**Introduction**

Countries differ in the implementation of the PMDT in terms of the phase or stage where they are in, whether in the pilot phase, expansion or scaling up phase. But, regardless, challenges revolve around the elements of the framework of DR-TB control. Working closely with NTPs country-by-country is key for technical agencies to prioritize relevant support.

**Political commitment**

In many countries, funding for PMDT is largely from an external grant; hence, with a limited project life and of a limited scope. Sustainability is a huge concern, and treatment is limited to a targeted number of patients that may not make an impact in the epidemiology of DR-TB in the country. Moreover, there are funding gaps that preclude quality management of DR-TB cases, such as insufficient human resources and unsuitable infrastructure (e.g. rooms without infection control measures, no ICU, etc.).

**Case finding and laboratory**

The problem of missed cases is true for many countries. Many have introduced rapid diagnostics. However, access remains difficult for patients, as Xpert and other diagnostics are still too centralized and patients have limited means to reach the laboratories. In some, rapid diagnostics lose relevance because of a weak mechanism to send back results. In others, the problem is in identifying people at risk for DR-TB, and thereby missing out on the eligible patients. The weakness in some settings lies in the diagnostic chain analysis: (a) defining risk groups for DR-TB through DRSs; (b) defining the numbers from district/BMU registers; (c) formulating the diagnostic
Combating Drug-resistant Tuberculosis

algorithm; (d) calculating the number of reagents/cartridges needed, and the cost; (e) ensure that TB frontline workers have a clear understanding of the risk groups; and (f) monitoring and supervising the identification of risk groups, and ensuring that they are tested.

DST to SLDs is often missing in algorithms, or is done very late. This neglects detection of pre-XDRs and XDRs, and endangers amplification of resistance. On the other hand, sometimes DST is overdone, with full tests being done to all drugs, including those with proven inaccuracy and lack of reproducibility, and thereby misleading health providers and adding unnecessary costs to programmes. DST is recommended only for Isoniazid (H), R, fluoroquinolones and second-line injectables as they are the only ones known to be accurate and reproducible. The other method of DST to SLDs is MTBDR sl assay. As an initial test, it can rapidly rule-in SLD-resistance and may be done in places where LPA capacity is already in place; however, a negative test cannot rule out resistance.

A number of countries have included presumptive TB cases, with no DR-TB risk, in the eligibility list for Xpert. This may be reasonable in countries with high MDR prevalence such as the former Soviet Union countries; however, for those with a low MDR prevalence, like most SEARO countries, selection criteria are needed. Diagnostic algorithms need to be revisited.

Treatment

Challenges in treatment include the gap between diagnosed cases and treated patients. Quality treatment lags behind, because of lack of qualified human resource and infrastructure (hospital beds). Complex DR-TB cases, due to non-response, pre-XDR, XDR, or ADRs, and comorbidities, and unsupervised therapy are big concerns. With the long treatment of MDR-TB, patient-centred approaches are needed for treatment completion. Ambulatory and community-based management is called for, rather than prolonged hospitalization that brings patients away from their livelihood and daily responsibilities. Ambulatory care needs preparation of peripheral sites and staff, and a strengthened monitoring and supervisory role by the central level. Enablers, and incentives are needed for both patients and health workers. The good news is that shorter regimens are now being introduced under operational research conditions, and new drugs (bedaquiline and delamanid) are being made accessible. But, at this stage, the inclusion criteria are limited, and because of the toxicity profiles of...
some drugs and drug combinations, active pharmacovigilance through CEM needs to be established.

**Drug management**

Because of the short-shelf life and long-lead time for SLD procurement, drug management in PMDT is a challenge. In settings where the 9-month regimen is being implemented together with the 20-month regimen, stock management is all the more made complex with the overlap of the two regimens. Preferably an electronic tool can be made available, such as the QuanTB developed by SIAPS and being rolled out through MSH (SIAPS, USAID funding) and KNCV with Eli Lilly funding.

**Recording and reporting (R & R)**

Inherently because of the duration of treatment for MDR, R & R in PMDT is not easy. A number of countries still have no proper reporting of PMDT detection, enrollment, interim and final outcomes. KNCV is introducing the quarterly interim cohort monitoring (QICM) that can support countries in the early detection of outcomes. This can be applied in every treatment facility and consolidated into a national report.

Monitoring and supervision (M & S) cannot be over emphasized. It must be well-financed and included in countries’ strategic plans. While R & R may be in place, programmes sometimes are too preoccupied with the day-to-day implementation that the patient progress is neglected. Without an efficient M & S, failing patients may be overlooked, leading to poor outcomes.

**Recommendations:**

For NTPs and in-country implementing partners

- Countries to submit annual plan of TA requirements to rGLC Secretariat by September each year. In-country discussions on annual TA plans are required between NTP, WHO Country Office and other technical agencies working in the country.
All interested persons should subscribe to GDI mailing list by leaving contact details on the GDI web site or contacting the GDI Secretariat at WHO HQ.

United States Agency for International Development (USAID) has launched a Bedaquiline donation programme. Countries interested in accessing the drugs need to know the procedural details. Countries interested in introducing new drugs should prepare proposal and plan for implementation.

For WHO and international partners

- rGLC secretariat to pro-actively communicate with countries regarding TA needs and follow-up on recommendations from the missions.

2.6 Session: Assessing the impact of TA and monitoring missions

Country presentations on recent TA missions, status of recommendations and challenges faced

During this session representatives from respective countries made a presentation on the status of recommendations made during the last monitoring and TA missions, and challenges faced in fulfilling those recommendations. Most countries have progressed significantly with the implementation of recommendations. However, there are some recommendations pending for implementation in individual countries. Some of the common challenges faced by countries in implementation of the recommendations made by various missions are as follows:

- Financial gaps in implementation of several activities. While some countries expect increase in government financial supports in coming years, most countries continue to be dependent on external resources like the GF. Inadequate budget for proper trainings and orientation of health workers.

- Inadequate technical capacity is faced in several countries including lack of skilled HR needed to sustain quality of care to DR TB cases.

- Involvement of multi-partners is considered an advantage for countries’ programmes. However, when there is a lack of co-
ordination among partners for specific activities, this becomes a huge challenge specifically for the national programme.

- Many countries have reported challenges with maintenance of equipment, specifically the GeneXpert machines, specifically Module failure. In smaller countries, there are no authorized service providers to help with this situation.

- Lack of Internet connectivity in remote areas of many countries is hindrance to networking.

- Recommendations should be formulated with realistic timelines, sorting them out based on deadline. For example, achievable within one year, within 2-3 years and so on to avoid repeating same recommendations year after year and blaming NTP for not achieving recommendations after just one year.

**Recommendations:**

For NTPs and in-country implementing partners

- Timely planning of TA and monitoring missions is essential. Countries to discuss TA mission requirements with the rGLC secretariat at least three months ahead of the planned dates of the mission.

- In-country consultation by all partners and discussions with NTP on planned missions. These missions can be entered on TB Technical Assistance Mechanism (TBTEAM) web site to avoid duplication.

For WHO and international partners

- Where possible, monitoring missions to be linked with capacity-building exercise and TA required to reduce costs and time.

- Follow-up recommendations every six months through desk review and assess the status of implementation. Countries also need to be supported for prioritizing recommendations when sufficient funding is not available to fulfil all recommendations.

- Timely finalization and submission of monitoring mission reports to countries by visiting consultants and review by r-GLC.
2.7 Session: Scaling up the treatment and care of drug-resistant TB

Group work

In this session, the participants undertook a guided work in country groups to plan activities for 2015 and 2016, assess needs and identify potential challenges for the planned activities. The participants were provided with x sheets to work on. This helped them define targets for case detection and enrollment for MDR and XDR-TB. There was a worksheet on diagnostics that helped participants identify their needs for laboratory expansion including rapid diagnostics, and C/DST for first and second line anti-TB drugs. There were also worksheets on treatment capacity, introduction of new drugs and regimen, drug management and programme management in general. At the end of the session, representatives from each country group presented the work. This also helped groups in identifying some of the TA needs for the remaining and next year.

Recommendations:

For NTPs and in-country implementing partners

- Detailed planning for expansion of PMDT services is required. Some countries may need TA support for updating the expansion plans. The requirements for a TA for the preparation/update of the PMDT expansion plan should be submitted to the rGLC secretariat by August 2015.

- Several countries have insufficient funding for all planned activities. Increased domestic allocation and later reprogramming of GF grants may be considered. Additional resources may also be explored through other funding agencies.

- Capacity-building on various aspects of PMDT required based on country specific needs. This could include, programmatic management, clinical management, laboratories, patient support, drug management, etc.
Report of a regional workshop

For WHO and international partners

- Provide opportunities for sharing experience in patient-care models and their impact in various Member States should be provided. The experiences also need to be documented.

- WHO and partners can support establishment of Centres of Excellence in countries based on the MDR-TB disease burden and assessed need.

- Support country TA/capacity-building needs through focused missions for identified areas.
Annex 1

Opening remarks by Dr Poonam Khetrapal Singh
Regional Director, WHO South-East Asia
(Read by Ag WR-Thailand)

Ladies and gentlemen,

I have great pleasure in welcoming you all and conveying the greetings of Dr Poonam Khetrapal Singh, Regional Director, WHO South-East Asia Region.

As the Regional Director is unable to be here today, I have the honour to deliver her address. I quote-

“The WHO South-East Asia Region continues to bear a significant burden of tuberculosis carrying 38% of the global burden in terms of TB incidence, an estimated pool of nearly 4.5 million cases, to which about 3.4 million are added each year. Fortunately, a decline in prevalence is observed in all Member States of the Region with some reporting a decline of over 50%, compared with 1990. A significant decline in mortality rate has been achieved in the Region.

The high treatment success rates achieved by national TB control programmes in the Region have resulted in maintaining the slow but steady decline in TB incidence rates during the past decade. This has also led to low levels, almost 2.2%, of multidrug-resistance (MDR) among newly detected cases. Among previously treated cases in the Region, the MDR-TB rate is estimated to be higher at around 16%. However, given the large numbers of TB cases in the Region, this translates to nearly 89,000 MDR-TB cases, accounting for nearly one quarter of the world’s MDR-TB cases estimated to exist among notified cases in 2012.

An added cause for concern is that extensively drug-resistant TB (XDR-TB) has also been reported from six countries – Bangladesh, India, Indonesia, Nepal, Myanmar and Thailand – in the Region.
Ladies and gentlemen,

The first priority in addressing MDR-TB remains prevention of acquired drug resistance by ensuring higher case detection and cure rates through high quality of DOTS services. In this context, national TB programmes have recognized the need to simultaneously address the existing pool of MDR-TB cases in line with internationally recommended protocols, including good infection control measures.

In 2011, the WHO Regional Office for South-East Asia published the *Regional Response Plan for Drug-resistant TB Care and Control*. In 2012, the Regional Advisory Committee on MDR-TB, in other words, the Regional Green Light Committee (r-GLC) was established in the WHO South-East Asia Region. This committee as an advisory body to the Regional Director, provides guidance on new policies and strategies for and implementation of programmatic management of drug-resistant TB.

Although significant achievements have been made in tuberculosis control over the past two decades, they are far from enough to ensure achievement of the TB elimination target set out in the WHO “End TB Strategy” endorsed by the World Health Assembly in May 2014.

Challenges pertaining to inadequate coverage and poor performance of health services limit access to high quality tuberculosis care in some of the countries of our Region. Moreover, many private health-care providers are not integrated with national tuberculosis control efforts. In addition, tuberculosis largely being a disease of the poor, the absence of universal health coverage further aggravates the economic burden of TB on the poor. This hardship is compounded by a lack of social protection mechanisms to address associated income loss and non-medical cost. The weakness in health systems have limited the linkages that are required across social sectors in order to address poverty, under-nutrition and the risk factors that adversely influence the health outcomes of people affected by tuberculosis and their vulnerability to it.

Ladies and gentlemen,

I hope that this workshop, while highlighting the global and regional M/XDR-TB emergency, will lead to renewed commitment to urgently accelerate efforts in the public and private sectors to achieve universal access to quality assured diagnosis and treatment by all TB patients. This is
essential to help achieve the TB elimination target by 2035. This will also help in improving information systems at different levels of health-care facilities in countries to report on the outcomes of DR-TB cases detected and treated under national TB programmes, based on recently updated WHO guidelines.

I am also confident that this workshop will contribute towards a better understanding of our needs and in improving our response to this more serious form of TB in this Region. I would urge that we use this opportunity to learn from experiences in our Region and elsewhere to effectively plan the next steps to address drug-resistant TB in countries of our Region. I would conclude by expressing my sincere gratitude to the Royal Thai Government for agreeing to host this important meeting in Bangkok”.

I will, of course, apprise the Regional Director on the outcome of this workshop. In conclusion, I wish you all fruitful deliberations and a pleasant stay in Bangkok.

Thank you.
Annex 2

Agenda

- Welcome remarks by WR Thailand
- Address by the Representative, MoPH, Thailand
- Objective of the meeting and introduction of participants by Regional Adviser-TB, WHO/SEARO
- Global situation of MDR-TB: progress and challenges
- Regional situation of MDR-TB: progress and challenges
- Progress in rapid diagnostics and recommendations for diagnostic algorithm
- Aligning laboratory expansion plan, case finding strategies and treatment capacity
- Country poster presentations
- Introduction of new drugs and regimen for MDR-TB
- Active Pharmacovigilance for New Drugs and Novel Regimens for the Treatment of MDR-TB
- Ensuring patient centered care for TB and MDR-TB
- Engaging all care providers in the management of drug-resistant TB
- HRD for universal access to MDR-TB services
- Global Drug-resistant TB Initiative (GDI)
- Role of the Regional Green Light Committee (r-GLC)
- Key challenges in supporting countries on PMDT expansion - Technical agency perspective
- Donor perspective on TA for MDR-TB
- Country presentations on PMDT monitoring and TA mission in last one year and action taken
- Planning and financing DR-TB
- Group work: Developing an action plan for next one year and identifying the financial and technical assistance required
- Plenary discussion – Regional needs for Universal access to PMDT
- Conclusions, Recommendations and Next Steps.
Annex 3

List of participants

**Bangladesh**

Dr Md Mozammel Haque  
Deputy Director, MBDC &  
Programme Manager – TB  
DGHS, Mohakhali

Dr Md Sk Shahid Ullah  
Assistant Professor (Microbiology)  
OSD, DGHS  
Mohakhali

Dr Nazis Arefin Saki  
Medical Officer – MDR TB  
MBDC, DGHS  
Mohakhali

**Bhutan**

Mr Chewang Rinzin  
Programme Officer  
National TB Control Program  
Department of Public Health  
Ministry of Health  
Thimphu

Mr Karchung Tshering  
Lab Technologist  
Public Health Laboratory  
Thimphu

Dr D.B. Subba  
Medical Specialist  
Jigme Dorji Wangchuk National Referral Hospital  
Thimphu

**Democratic People’s Republic of Korea**

Dr Choe Tal Bom  
Chief, TB Chair  
Pyongyang Medical College  
Kim Il Sung University  
Democratic People’s Republic of Korea  
Pyongyang

Dr Yun Song Sik  
Section Chief  
National TB Institute  
Ministry of Public Health  
Democratic People’s Republic of Korea  
Pyongyang

Dr Kim Kwang Jin  
National Professional Officer  
WHO – Democratic People’s Republic of Korea

**India**

Dr Vikram Vohra  
National Institute of Tuberculosis & Respiratory Diseases  
Sri Aurobindo Marg  
New Delhi

Dr Sanjiv Kamble  
State TB Officer  
Alandi Road  
Pune

**Indonesia**

Dr Christina Widaningrum  
Deputy Director TB Control  
Directorate Communicable Disease Control  
Ministry of Health  
Republic of Indonesia

Dr Setya Budiono  
Head of Section  
Disease Control  
Provincial Health Office of East Java  
Indonesia

Dr Fathiyah Isbaniah  
TB MDR Clinical Specialist  
Persahabatan Hospital  
Republic of Indonesia
Combating Drug-resistant Tuberculosis

Maldives
Dr Moosa Hussain
Consultant in Respiratory Medicine
Indira Gandhi Memorial Hospital
Male
Ms Aminath Aroosha
Public Health Programme Officer
Health Protection Agency
Male
Ms Shina Ahmed
Public Health Programme Officer
Health Protection Agency
Male

Nepal
Dr Bikash Lamichhane
Director
National Tuberculosis Centre
Kathmandu
Mrs Kamala Devi Wagle
Public Health Nurse
National Tuberculosis Centre
Kathmandu

Sri Lanka
Dr Dhammika S Vidanagama
Microbiologist
National Programme for TB Control & Chest diseases
Public Health Complex
555/5 Elvitigala Mawatha
Narahenpita, Colombo - 5
Dr R M Gamini Rathnayake
Medical Officer
National Programme for TB Control & Chest diseases
District Chest Clinic
Chest Hospital
Walisara

Thailand
Dr Narumol Luekitinan
Medical Officer
Bureau of Tuberculosis
Department of Disease Control
Ministry of Health
Bangkok
Mrs Sirinapha Jittimanee
Public Health Technical Officer
Bureau of Tuberculosis
Department of Disease Control
Ministry of Health
Bangkok
Mrs Sonjit Pongpanit
Registered Nurse
Bureau of Tuberculosis
Department of Disease Control
Ministry of Public Health
Bangkok

Timor-Leste
Mr Laurindo Dasilva
Ag. Of National Programme Manager
Ministry of Health
Dili

Special Invitees
Professor Surender K. Sharma
Senior Professor & Head, Department of Internal Medicine
(Who Collaborating Centre for Research & Training in Tuberculosis)
All India Institute of Medical Sciences
New Delhi- 110 029
Dr Gajananda Prakash Bhandari
Epidemiologist
SAARC TB and HIV Centre
Thimi, Bhaktapur, Kathmandu
Nepal

Representative from Lead NGOs/Technical Partners from Member countries
Dr Shayla Islam
Programme Manager
Tuberculosis Control Programme, BRAC
BRAC Centre (16th Floor)
75 Mohakhali, Dhaka-1212
Dr Jan Voskens
Country Director
KNCV - Chief of Parties TBCARE1
Pancoran, Jakarta Selatan 12870
PO Box 4665 - Jakarta 10046
Report of a regional workshop

Ms Esty Febriani
Public Health Coordinator LKNU-CEPAT
Jl. Raden Saleh,
Graha Tirtadi Building, 5th Floor
Jakarta, Indonesia

Ma Imelda D. Quelapio
Consultant
KNCV Tuberculosis Foundation
Parkstraat 17, 2514 JD The Hague
The Netherlands

Donor agency
Mr Michael Burkly
Director, Office of Public Health
Regional Team Lead for HIV and TB
USAID | Asia
Athenee Tower, 25th Floor
Bangkok

Observers (Thailand)
Dr Suksont Jittimanee
National TB Programme
Bureau of TB, Dept. of Disease Control,
Ministry of Public Health
Bangkok

Ms Ruetaiwan Boonpendej
Public Health Technical Officer
Office of Disease prevention and control
1 Bangkok

WHO Secretariat
Dr Linh Nguyen
Technical Officer
LDR - WHO/HQ
Geneva

Dr Sabera Sultana
National Professional Officer – DR TB
WHO Country Office
Bangladesh

Mr Namgay Tshering
National Professional Officer
WHO Country Office
Bhutan

Dr Partha Pratim Mandal
Technical Officer – TB/Malaria
WHO Country Office
Democratic People’s Republic of Korea

Dr Giampaolo Mezzabota
Technical Officer
WHO Country Office
Myanmar

Dr Lungten Wangchuk
Medical Officer -TB
WHO Country Office
Timor-Leste

Dr Md Khurshid Alam Hyder
Regional Adviser, Tuberculosis
Department of Communicable Diseases
SEARO, New Delhi

Dr Rim Kwang IL
Medical Officer – TB
Department of Communicable Diseases
SEARO, New Delhi

Dr Vineet Bhatia
Independent Consultant
New Delhi
Well-functioning national control programmes with high cure and detection rates are detecting only low levels of multidrug-resistant tuberculosis. The Region has relatively low levels of multi drug-resistance (MDR) among newly detected cases (2.2%). Among previously treated cases in the Region, MDR-TB rates range from 11-21% (16%). However, given the large numbers of TB cases in SEAR, this translates to 89,000 MDR-TB cases accounting for nearly one fourth of the world’s MDR-TB cases that was estimated to exist among notified cases in 2013.

The bringing together of participants from different countries in the Region allowed sharing and learning from mutual experiences that helped to provide inputs for the programmatic management of drug-resistant tuberculosis in their own countries. The timing was opportune as several countries have included activities to undertake or scale up MDR-TB management within their national plans for TB control and have secured significant funding for these plans during the past year.