

Programmatic Management of Drug-resistant Tuberculosis

*Report of a regional workshop
Chiang Mai, Thailand, 17-21 September 2012*



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1. Inaugural session

The regional workshop on Programmatic Management of Drug-resistant Tuberculosis (PMDT) was inaugurated by Dr Maureen Birmingham, WHO Representative (WR) to Thailand. After welcoming the participants, she delivered the message from Dr Samlee Plianbangchang, WHO Regional Director for South-East Asia. The Regional Director commended the Region for good TB programmes that have a high cure rate. This has led to low multidrug resistance (MDR) rates of 2.1% among new TB cases. However, MDR among previously treated cases remains high at 17%. These rates translate to 105 000 cases of MDR-TB in the Region, which is one fourth of the global burden. The more severe form of extensively drug resistant (XDR) TB has been reported from five countries in the Region. The Regional Director also emphasized the need for good infection control measures to prevent the spread of airborne infection and specifically drug-resistant TB. Additionally, TB programmes have been integrated into the general health system and therefore strengthening of the overall health system in the Member States is needed.

The Region has taken steps to address drug resistance among TB cases and developed a Regional Response Plan in 2011. It also established an advisory committee for DRTB to function as a Regional Green Light Committee (rGLC) with the secretariat being located within the WHO Regional Office.

After delivering the message, Dr Birmingham explained the objectives of the workshop.

Overall objective:

- To improve management of drug-resistant TB cases under national TB programmes.

Specific objectives:

- To review the progress of the programmatic management of drug-resistant TB.
- To provide updates on the technical programmatic guidelines to improve management of drug-resistant TB under national TB programmes.
- To revise and draft country-specific plans for effective scale-up of programmatic management of drug-resistant TB.

2. Technical sessions

2.1 Overview of MDR-TB in SEA Region and response

Dr Md.Khurshid A Hyder, Regional Adviser for TB at the WHO Regional Office for South-East Asia presented an overview of TB and drug-resistant (DR) TB situation in the Region and the regional response plan. While the Region has relatively low proportions of MDR-TB among new cases (2.1%), the rates are high among previously treated cases (17%). In absolute numbers, this translates to nearly one fourth of the global MDR-TB cases. All countries in the Region have initiated programmatic management of drug-resistant TB (PMDT). Though the notification of MDR cases has increased in all countries, there is a huge gap between the estimated and notified cases. The treatment success rate among notified MDR-TB cases for the three cohorts of 2006, 2007 and 2008 are 57%, 75% and 63%, respectively. Dr Hyder outlined the changes in the Green Light Committee (GLC) mechanism and the establishment of the Global GLC (gGLC) at WHO-HQ and the Regional GLCs (rGLCs) at the regional level. In the South-East Asia Region, an MDR-TB advisory committee had been established earlier this year to function as the rGLC, with its secretariat at the WHO Regional Office. With the new GLC framework, there is no need to get “approval” from GLC and there will be an open access to second-line drugs (SLD) through the Global Drug Facility (GDF) mechanism. The roles and responsibilities of gGLC and rGLCs were spelt out. The way forward is to develop guidance on models of care, and monitoring and evaluation including electronic recording and reporting for MDR-TB. The guidance

should also cover aspects of treatment outcomes; a policy to encourage new drug and new regimen development; a strong advocacy strategy for countries, donors and technical agencies to achieve universal access to all those with MDR-TB; encouraging development of a low-cost, shorter-duration regimen, and increasing the number of WHO prequalified suppliers to avoid stock-outs.

Dr Hyder also clarified that WHO is using transparent methods for estimating the TB disease burden for Member States and the estimates are sent to them for verification before publication. In case countries have any doubts, they should get them clarified with the help of focal persons. The quality of data provided by the country can affect the model used for estimation. A confidence interval of uncertainty over the estimates is always provided to give a range of specific indicator values to take care of possible variance in numbers.

2.2 Regional framework to scale up PMDT through rGLC mechanism

Dr Rohit Sarin, chairperson of the MDR-TB advisory committee, the South-East Asia Region (rGLC), presented the details of the new global GLC framework, its structure and functions. He explained the need for transition from the previous GLC initiative and the rationale for the same. The new initiative is to support and facilitate scaling up of MDR-TB services and care with the goal of achieving universal access to DR-TB management by 2015. The regional advisory committee functioning as the rGLC will strive to increase national capacity through increased technical assistance, regular monitoring and evaluation, regularly updating international policy and guidelines and strengthening advocacy. Countries should include an outline of their MDR-TB expansion plan in the Global Fund application. There is no need for a separate application to GLC. The rGLC will provide technical support to update the PMDT guidelines and national expansion plan, procurement of SLD through GDF, implementation of DR-TB management, monitoring and evaluation, and provide recommendations, etc.

During the discussion, the following points were highlighted: the countries need not wait for a GLC mission for discussion to address the bottlenecks in PMDT expansion. There should be a continuous dialogue through the rGLC secretariat and together they would try to solve any

issues. For capacity-building, technical assistance available within the Region or outside the Region will be made available to the country requesting technical support. Perspectives of recipient countries need to be considered while offering technical support. For fund raising and mobilization of other resources, the advocacy strategy needs to be revisited and an action plan prepared by the rGLC.

2.3 Case finding strategies and prioritization of risk groups

Dr Rim Kwang IL, Medical Officer TB (MO-TB) and focal point for TBTEAM at the WHO Regional Office listed the risk groups for DR-TB in the order of Category II failures, close contacts of MDR-TB patients and Category I failure. The TB control programmes should confirm failure with culture and drug susceptibility test (DST) at least to H and R. With the availability of rapid drug resistance testing tools such as Line Probe Assay (LPA), liquid culture and Xpert MTB/Rif, it is possible to reduce the turnaround time for DST and expand availability of services. Patients failing on an MDR-TB regimen and close contacts of XDR-TB patients are at risk of XDR-TB and should have DST done for SLDs.

2.4 Introduction of new laboratory diagnostics

Mr Somsak Rienthong, regional expert for laboratory strengthening, while introducing the newer diagnostic tests stressed on the need to provide quality assured diagnosis to all TB patients for universal access. The different modalities available for detection of TB and DR-TB were discussed with advantages and disadvantages and the turnaround time for each. Newer technology of LED fluorescent microscopy to improve smear microscopy was highlighted. This could be used in both high- and low-volume laboratories. The advantages of using liquid culture/MGIT system, molecular methods such as LPA and Xpert MTB/Rif for reducing the waiting period for diagnosing MDR-TB were discussed. The Xpert MTB/Rif should ideally be placed at a district or subdistrict level and not at the central level. The site should have stable electricity supply, secure room for Xpert MTB/Rif system, cartridges and computer and appropriate ambient temperature. The future may lie in getting a point-of-care test, like Loop Mediated Isothermal amplification (LAMP) assay. WHO has clearly recommended that serological tests for diagnosis of TB should not be used.

This has also been endorsed by ministries of health in some Member States like India.

2.5 Practical demonstration of PMDT services

The first half of the day was devoted to a field visit for a practical demonstration of PMDT services in Chiang Mai. Participants were divided into three teams and each team visited one hospital to observe the implementation and facilities available for DR-TB treatment. The teams presented their observations after the visit. Some of the common observations for the sites were:

- good hospital triage policy/IC;
- high ART coverage;
- all sputum smear-positive cases screened for MDR;
- rapid tests (like LPA and PCR) being introduced at some of the sites;
- all MDR TB confirmed and registered cases offered treatment;
- high treatment success rate for MDR TB;
- manual and electronic R&R at all sites;
- social support and DOTS Plus team;
- active case finding at prisons; among diabetes cases; HIV-positive people and close contacts of TB patients;
- several private hospitals refer MDR/TB cases to public hospitals;
- use of IPT in children as pilot.

The teams also discussed possible recommendations for these sites in the presence of the NTP manager and his team. Since this exercise was for demonstration, the recommendations were not officially recorded.

2.6 WHO guidelines for PMDT: 2011 update

Dr Ernesto Jaramillo from WHO headquarters described the need for updating the guidelines and presented the methods used. The main

changes from the 2008 Guidelines for PMDT were presented. The major recommendations are:

- (1) Rapid DST of isoniazid and rifampicin or rifampicin alone should be used over conventional testing or no testing at the time of diagnosis of TB, subject to available resources.
- (2) Sputum smear microscopy and culture should be used rather than smear alone for monitoring of patients with MDR-TB during treatment.
- (3) In the treatment of patients with MDR-TB;
 - fluoroquinolone must be included in the standard regimen. A later generation fluoroquinolone rather than an earlier generation should be used;
 - ethionamide (or prothionamide) should be used;
 - four second-line anti-TB drugs likely to be effective (including a parenteral agent) as well as pyrazinamide should be used in the intensive phase (IP).
- (4) An intensive phase of eight months is suggested for most patients, and the duration may be modified according to patient's response to therapy.
- (5) In the treatment of patients with newly-diagnosed MDR-TB, a total treatment duration of at least 20 months is suggested for most patients, and the duration may be modified according to response to treatment.
- (6) Antiretroviral therapy is recommended for all patients with HIV and drug-resistant TB requiring second-line antituberculosis drugs, irrespective of CD4 count and as early as possible (within the first four-eight weeks) following initiation of antituberculosis treatment
- (7) Patients with MDR-TB should be treated using mainly ambulatory care rather than models of care based principally on hospitalization.

2.7 MDR-TB treatment strategy

In her presentation, Dr Santha Devi, regional expert in TB control, covered the available second-line drug regimens for managing MDR-TB, the mechanism of action of the drugs available and the main principles in designing the regimen for MDR-TB management. It was stressed that no clinical trials had been conducted comparing the efficacy of different regimens and drugs. The existing international recommendations are mainly based on expert opinion and experience in clinical medicine, as opposed to programmatic management. The five important principles for designing an MDR-TB regimen that were highlighted were: (1) to use at least four reliable drugs; (2) not to use drugs that are known to have cross-resistance; (3) to use drugs that are safe; (4) to include drugs in the hierarchical order of efficacy; and (5) to be prepared to monitor and manage the adverse reactions. The duration of treatment should be guided by both smear and culture conversion. The minimum duration recommended was at least 8 months of an intensive phase followed by a 12-month continuation phase.

The DST results need to be interpreted cautiously: while *in vitro* and *in vivo* correlation of DST is very reliable for isoniazid and rifampicin, this is considerably less reliable for streptomycin and ethambutol, and quite poor for other second-line drugs. However, DST to kanamycin and ofloxacin are useful. All DST results have to be interpreted taking the history of drug use by the patient into consideration.

The determinants for choosing a Category IV regimen for the treatment of MDR-TB cases are dependent on the available national DRS data and use of second-line drugs in the country. The relative merits of standardized as opposed to individualized treatment regimens were discussed, as also the merits and demerits of empiric treatment of Category II failures and other patients who are considered to be at high risk of having developed MDR-TB.

2.8 Management of MDR-TB in special situations

This presentation was a continuum of the earlier presentation made by Dr Santha Devi. She informed the participants that management of MDR-TB may need to be modified in certain special clinical situations. Not much data are available on the management of MDR-TB during pregnancy. If the

patient is pregnant, it is preferable to postpone the initiation of treatment to the second trimester after this is agreed upon by the patient and the doctor, unless the clinical status is deemed to be severe and posing a threat to life. It is preferable to avoid aminoglycosides, ethionamide and prothionamide during pregnancy.

In the case of a breastfeeding mother, the infant should be given infant formula and the mother and child should interact only in a well-ventilated area. It is advisable for the mother to cover her mouth while handling her baby.

The long-term effects of second-line drugs among children have not been studied. No drug is absolutely contraindicated in children and MDR-TB therapy in children should follow the same principles as for adults, with the dosages adjusted to body weight.

For patients with MDR-TB and diabetes, use of ethionamide/prothionamide may make it more difficult to control the blood sugar levels and may also require the monitoring of creatinine and potassium more frequently.

The management of MDR-TB in patients with a history of renal insufficiency requires dose adjustments, while those with liver disorder cannot be given pyrazinamide and those with seizure disorders should be given anti-convulsants in addition. Cycloserine could be given for patients with psychiatric disorders in consultation with the psychiatrist, but with close monitoring.

2.9 Monitoring of patients with DR-TB

Dr Santha Devi, in this presentation said that it is advisable to develop standard monitoring for all patients using a standard format. All patients started on DR-TB treatment should have baseline evaluation clinically, bacteriologically with smear and culture at monthly intervals during the intensive phase and at 2 or 3 monthly intervals during the continuation phase, biochemical investigations prior to start of treatment to assess renal, hepatic and thyroid functions, serum potassium and sodium levels repeated at 6-monthly intervals for patients <50 years of age and at 3-monthly

intervals for those >50 years of age. Additional investigations can be ordered by physicians whenever deemed necessary.

Adverse drug reactions (ADRs) should be monitored closely and managed adequately. Ancillary drugs for managing ADRs should be made available.

The discussions during this session covered the following areas: how to decide when to stop the IP; value of high dose isoniazid in management of DR patients; and mother-to-infant transmission of disease, etc. Regarding stopping of IP, it is to be guided by the sputum results and the same can be extended up to nine months. Personal protection measures, and BCG vaccination to the infant at birth are the suggested measures to protect the child. The value of high-dose INH was debated and there was no final decision.

2.10 Proposed revisions to definitions of TB cases and treatment outcomes

Dr Sarin presented the need for and the proposed definitions of a case and the treatment outcomes. The main change in the case definition is to include WHO-endorsed rapid diagnostics and bacteriologically positive cases as definite cases and the rest as clinically diagnosed. All cases initiated on treatment need to be segregated according to age to capture more information on paediatric tuberculosis. To enable clinicians to take decisions, the definition of “cure” has been modified to “treatment completed as recommended by the national policy without evidence of failure AND three or more consecutive cultures taken at least 30 days apart are negative after the intensive phase”. Treatment failure is defined as “treatment terminated or need for permanent regimen change of ≥ 2 anti-TB drugs because of lack of conversion in the continuation phase, *or*, bacteriological reversion in the continuation phase after conversion to negative, *or* evidence of additional acquired resistance, *or* adverse drug reactions”. “Not evaluated” will include patient for whom “no treatment outcome is assigned” and “transfer outs”. These are proposed definitions and are being pilot-tested and the final definitions will be based on the results.

The recording and reporting format will be changed to accommodate these changes. The main implication is that the need for training would increase considerably.

2.11 TB infection control and protection of health-care workers

In his presentation, Dr Hyder stressed the importance of infection control and the need to protect health-care workers (HCWs). Use of personal protection measures such as using mask, gloves and apron as well as regular screening of health workers at regular intervals was stressed. The administrative controls include policies and procedures to promptly identify potential or known infectious cases of TB and to separate and treat them with the minimal delay. Providing adequate and effective ventilation should be prioritized. The organizational activities are based on the role of the infection control body to assess the problem, provide oversight, monitor, and evaluate the progress of TB infection control practices; developing a policy for infection control and providing an infrastructure to support and facilitate the implementation, operation and maintenance of the administrative, environmental and personal protective controls.

During the discussion, the need for regular screening of HCWs and reporting of TB among them was highlighted.

2.12 Models for DR-TB management and care: lessons emerging from all over the world

Dr E. Jaramillo presented the models of DR-TB care. He brought out the need to use the resources available with flexibility and creativity while the capacity for the highest standard of care is being built by keeping the interest of the patient in the forefront. The variables to be considered while designing the model of care include: patient needs and his/her preferred options to adhere to treatment, local law and ethics standards, geographical access to points of care, hospitals with infection control measures in place, need of thoracic surgery as part of treatment, engagement of the private sector and public hospitals in M/XDR-TB management according to national guidelines, fair match between number of patients to be treated and hospital-bed capacity, funding to guarantee the health-care workforce needed to deliver DOT, primary health-care workforce properly trained on

MDR-TB management and the burden of HIV among MDR-TB patients to be treated, and the level of collaboration established with HIV control programmes. Additional factors to be considered are the laboratory capacity in place to monitor response to treatment, attitudes of caregivers to the different options of care, social support networks that facilitate a patient-centred approach to DOT, capacity to educate and not only to train patients and family on hygiene and infection control measures at the household level.

The decision on what models to adopt should be based on the country situation. There is enough evidence to consider cost-effective community-based ambulatory care.

2.13 Management of second-line drugs

Ms Nigorsulton Muzafarova, Global TB Drug Facility (GDF) presented the outline of the drug management cycle with particular reference to second-line drugs. To ensure uninterrupted access to quality-assured second-line drugs, there is a need to have a well designed system for procuring, managing, distributing and accounting of drugs. The current global situation is that there are:

- limited number of quality assured (QA) manufacturers;
- most SLDs have a short shelf life;
- weak and uncertain demand makes registration of SLDs unattractive for manufacturers;
- a long lead time eight months plus from planning time to placement of order and another six months from placement of order to actual delivery;
- the problem of quantification due to frequent change as a result of adverse drug reactions or poor response to treatment.

Participants were also introduced to a standardized tool for estimating and forecasting drug requirements and were given time to practise using the tool. Short presentations on the various fields in the template were made and examples used to explain the forecasting and management of second-line drug requirements. It was observed that many countries in the

Region had introduced their own tools/software for SLD quantification and ordering.

Participants were given a hands-on training in drug forecasting and ordering.

2.14 Planning for DR-TB control

Dr Vineet Bhatia, regional expert in TB control, explained the template developed for self-assessment, planning and monitoring for expansion of MDR-TB services in programme settings. Countries worked on the template and presented their plan of expansion at a plenary session. The common challenges identified were:

- The South-East Asia Region carries 34% of the global MDR-TB burden. With current efforts, the notification of MDR cases will reach only around 20% of the estimated MDR cases among the notified pulmonary TB cases in the Region by 2012.
- Diagnostic and treatment initiation delays reported when conventional methods for DST are used.
- Absence of nationally representative data on DRS in several countries.
- Scaling up of services to attain the global target of universal access for diagnosis and Rx for all MDR-TB cases by 2015:
 - laboratory capacity
 - availability and drug management of SLD
 - Resource mobilization.
- Timely availability of quality assured SLDs remains a challenge. Some of this is because of the delayed funding disbursements due to various reasons.
- Infection control measures specifically those involving investments in infrastructure are seen as low-priority activities.
- Limited provision of psycho-social support for DR-TB patients – guidelines for such support needed.

- Large funding gap for PMDT implementation and donor dependence in most countries.
- Extensive private/non-NTP sector in several countries and most of them do not adhere to national guidelines.
- Huge training needs for introduction of revised case definitions including change in recording and reporting formats.

The workshop concluded after the presentation of conclusions and recommendations. Participants provided the following consensus feedback to WHO and partners so that future MDR and XDR-TB treatment recommendations would reflect programmatic concerns and operational realities.

3. Conclusions

- There has been a steady and significant progress in PMDT expansion in the Region since the last regional workshop with all countries (except Maldives) now implementing a national PMDT expansion plan.
- Nearly 4000 MDR TB cases were enrolled in the Region in 2010. This number is expected to be higher in 2011–2012 as per the country plans.
- A regional response plan for PMDT was developed by the Regional Office in 2011 with consensus of countries and stakeholders.
- A regional MDR-TB advisory committee (r-GLC) has been established with its secretariat being in the Regional Office. The committee held its first meeting in May 2012.
- All countries in the Region, except Maldives and Timor-Leste, have quality-assured culture/DST laboratory services available. However, Maldives and Timor-Leste are in the process of getting their laboratories.
- Rapid diagnostics have been introduced in Bangladesh, India, Indonesia, Myanmar, Nepal and Thailand.

- Countries following hospital-based treatment are planning to reduce the hospitalization period with plans for mainly ambulatory treatment.
- Results of DRS are expected in Bangladesh, Bhutan, Myanmar and Nepal, and are planned for a few countries.
- Domestic financial resource allocation has been increased especially in India and Indonesia, demonstrating political commitment.

4. Recommendations for Member States

The Member States should:

- continue prioritizing basic TB care services to prevent emergence of resistance
- intensify DR-TB case finding activities with specific focus on high-risk groups
- develop and monitor laboratory expansion plan for access to bacteriology/molecular diagnostics in the entire country
- align country PMDT expansion plan with regional response plan with the overall goal of universal access to PMDT services
- expand palliative care component and include end-of-life care as needed for MDR-TB patients
- develop innovative methods of treatment adherence among MDR-TB patients including psychosocial support
- mobilize resources for the PMDT scale-up plan through local domestic sources and bridge any gaps through the GF and other bilateral donors.
- ensure that there is a plan for procurement of quality-assured SLDs systematically and well in advance.
- advocate with drug regulatory authorities for restricted sale of FLDs and SLDs.

- coordinate with partners for regular monitoring of progress of PMDT implementation.
- expand the public-private mix (PPM) for MDR-TB care and management in all sectors.

5. Recommendations for WHO and partners

WHO and partners should:

- provide need-based technical assistance for PMDT for policy development, expansion of services and resource mobilization
- continuously appraise the countries with latest WHO recommendations and guidelines
- support pre-qualification of SLD manufacturers in the Region
- provide technical assistance in first- and second-line drugs management
- establish a stockpile of SLDs
- provide assistance in introduction and roll-out of newer technologies, specifically the rapid diagnostic tests as may be appropriate in the country context
- support establishment of another supranational reference laboratory (SNRL) within the Region to reduce the burden among existing SNRLs as well as effective management of quality assurance of laboratories within the Region
- strengthen country capacity in PMDT monitoring and evaluation
- engage GF for timely disbursement of funds, specifically for drug procurement
- support operations research for MDR-TB care and control.

Annex 1

Message of Dr Samlee Plianbangchang, Regional Director, WHO South-East Asia

(delivered by Dr Maureen Birmingham,
WHO Representative, Thailand)

Ladies and gentlemen,

I have great pleasure in conveying the greetings of Dr Samlee Plianbangchang, Regional Director, WHO South-East Asia, and welcoming you on his behalf to this regional workshop on programmatic management of drug-resistance tuberculosis.

As Dr Samlee is unable to be here today, I have the honour to read out his address. I quote.

“The WHO South-East Asia Region continues to bear more than one third of the global burden of tuberculosis, an estimated pool of nearly five million cases to which about 3.5 million are added each year. This is despite a more than 40% decrease in prevalence rates since 1990. The decrease in prevalence rates has been achieved due to a good case-notification and treatment success rate of more than 85% for the Region as a whole.

Functional national TB control programmes 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, 2.1 % (range: 1.7%- 2.5%), 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 17% (range: 17%-18%). However, given the large number of TB cases in the Region, this translates to 105 000 MDR-TB cases (85 000–125 000), accounting for nearly one fourth of the world’s MDR-TB cases estimated to exist among notified cases in 2010.

Extensively drug-resistant TB (XDR-TB) has also been reported from five countries (Bangladesh, India, Indonesia, Nepal and Myanmar) in the Region.

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.

During the past two years since a similar workshop on drug-resistance TB was held in Nepal in October 2010, steady progress has been made in the Region. In 2011, the Regional Office published the *Regional Response Plan on MDR-TB*. In response to the need for scaling up the programmatic management of drug-resistant tuberculosis in the WHO South-East Asia Region, and under the new framework of the Global Green Light Committee, the Regional Office recently established a Regional Green Light Committee Secretariat with a Regional Advisory Committee on MDR-TB.

This Secretariat is functioning as an advisory body to the WHO Regional Office for South-East Asia, to WHO's Member States in the South-East Asia Region, as well as donors and partners in scaling up of implementation of programmatic management of drug-resistant TB in countries of our Region.

There are several issues and challenges to effectively and efficiently address this emerging public health problem. This can be done by strengthening our health system based on the primary health care approach and relying on partnerships as in the past.

I am certain that this workshop will provide clear technical guidance to national TB control programmes on the best measures for managing multidrug-resistant and extensively drug-resistant tuberculosis. It will also help in improving information systems at the different levels of health care facilities in countries to report on the outcomes of MDR-TB cases detected and treated under national TB programmes, based on the 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 the experiences of countries in this Region and elsewhere to effectively plan the next steps to address drug-resistant TB in countries in our Region. I would conclude by expressing my sincere gratitude to the Royal Thai Government for agreeing to host this important event in Chiang Mai." Unquote.

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 Chiang Mai.

Annex 2

Agenda

- (1) Overview of MDR-TB in the South-East Asia Region and response to DR TB.
- (2) Regional framework to scale up PMDT through rGLC mechanism.
- (3) Case finding strategies and prioritization of risk groups.
- (4) Introduction of new laboratory diagnostics especially liquid culture, line probe assays and Xpert MTB/Rif diagnostic test.
- (5) WHO guidelines for the PMDT 2011 update.
- (6) MDR-TB treatment strategies.
- (7) Treatment in special conditions and situations and treatment monitoring.
- (8) Proposed revisions to definitions of TB cases and treatment outcomes.
- (9) Infection control and protection of health-care workers.
- (10) Models for DR-TB management and care, lessons emerging from all over the world.
- (11) Post-2015 TB strategy, the South-East Asia Region perspective.
- (12) Management of second-line drugs: forecasting, procurement, supply and storage.

Annex 2

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The first priority in addressing MDR-TB remains prevention of acquired drug resistance by ensuring higher case detection and cure rates through high-quality 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, WHO Regional Office for South-East Asia published the Regional Response Plan on MDR-TB. In response to the need for scaling up the programmatic management of drug-resistant tuberculosis in the WHO South-East Asia Region, and under the new framework of the Global Green Light Committee, the Regional Office recently established a Regional Green Light Committee Secretariat with a Regional Advisory Committee on MDR-TB.

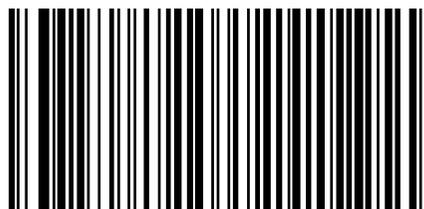
The Regional Workshop on Programmatic Management of Drug-Resistant Technologies held in Chiang Mai, Thailand from 17 to 21 September 2012 provided clear technical guidance to national TB control programmes on the best measures for managing multidrug-resistant and extensively drug-resistant tuberculosis. It also helped in improving information systems at the different levels of health-care facilities in countries to report on the outcomes of MDR-TB cases detected and treated under national TB programmes, based on recently updated WHO guidelines.



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