

# TURNING THE TIDE ON TB

## Tackling DR-TB and TB/HIV co-infection in Myanmar



**22-23 August 2013** Inya Lake Hotel, Yangon





Dear Colleagues and Friends,

It is our pleasure to welcome you to Yangon to take part in “The time is now! Turning the tide on DR-TB and TB/HIV co-infection in Myanmar”.

The TB prevalence in Myanmar is nearly three times higher than the global average. A 2010 survey conducted by the National Tuberculosis Programme (NTP) with technical support from WHO and the Research Institute of Tuberculosis/Japan Anti-Tuberculosis Association (RIT/JATA) found a TB disease burden nearly three times higher than anticipated. Based on the survey, estimates of the number of cases in 2011 may be as high as 240,000, ten percent of whom are also living with HIV. Myanmar also has high levels of multidrug-resistant tuberculosis (MDR-TB) – WHO estimates their number to be close to 9000 per year. Only 778 MDR-TB patients were detected in 2012 (NTP).

The Ministry of Health has long-held ambitions to scale up access to TB treatment, including treatment for DR-TB and HIV/TB co-infection. In 2012, 442 patients with MDR-TB were enrolled in treatment, primarily by NTP. Compared to 128 MDR-TB patients that started treatment in 2010, this is obviously a significant improvement. Yet, availability of treatment for DR-TB remains far short of what is needed.

With new Global Fund commitments of 82 million US\$ for four years (2013 – 2016), the Ministry of Health is setting targets to expand active case-detection of TB, increase care of HIV/TB co-infection in 136 townships and scale-up provision of DR-TB treatment to 68 townships by 2014. Yet the country’s capacity remains limited by funding, infrastructure and human resource constraints, technical support, access of quality drugs and accessibility of new methods of care and innovation.

By the end of this symposium we hope to reach consensus on addressing the many challenges TB care and prevention is confronted with and identify the opportunities to meet the demands of universal access to DR-TB care. We are delighted to share regional and global experience of treating DR-TB and TB/HIV co-infection, increase collaboration between different implementing partners in the country and region and stimulate best practice and policy for DR-TB.

We hope you enjoy the symposium and we look forward to your active participation.

## DAY ONE - MORNING AGENDA

## The implementation of DR TB and TB - HIV integrated care in Myanmar and similar settings

Today's sessions will set out a contextual overview and highlight different approaches to caring for patients with TB and HIV both within Myanmar and from elsewhere in the region. The focus for DR-TB will be on the value of decentralised approaches, challenges and solutions. The focus for HIV is on integration and a one stop service.

- 08:30-09:00 **Registration and coffee**  
Group photo (10 minutes)
- 09:05-09:15 **Welcome Speech** by **HE Professor Dr Pè Thet Khin**, Union Minister for Health, Myanmar
- 09:15-09:25 **Welcome Speech** by **Unni Karunakara**, MSF International President
- 09:25-09:35 **Welcome Speech** by **Dr Jigmi Singay**, Acting WHO Representative for Myanmar
- 09:35-09:55 **Keynote Speech** by **Dr Lucica Ditiu**, Executive Secretary, STOP TB Partnership Project  
*"What is the situation regarding TB and HIV globally, and what should be done to address the problem?"*
- 09:55-10:25 **Break**
- Overview of DR-TB and TB/HIV in Myanmar**
- 10:25-10:55 "Epidemiological profile of DR-TB and TB/HIV co-infection in Myanmar"  
Speaker: **Dr Thar Tun Kyaw**, Director, Disease Control, Department of Health
- Session One: The Challenge of DR-TB**  
*Preventing a return to the pre-antibiotic era for TB control. This session will explore the consequences of mismanaging TB treatment.*
- Chair: **Dr Soe Lwin Nyein**, Deputy Director General, Disease Control Department, Myanmar  
Co-chair: **Eva Nathanson**, TB technical officer, World Health Organisation (WHO Myanmar)
- 10:55-11:00 Welcome and short introduction
- 11:00-11:20 MSF's experience of treating DR-TB in India  
*Exploring how India's problems with DR-TB evolved*  
Speaker: **Dr Petros Issakidis**, Senior Operational Research Fellow, MSF, India
- 11:20-11:40 Examples of DR-TB in the former Soviet Union  
Speaker: **Dr Philipp du Cros**, Head of the Manson Unit, MSF UK
- 11:40-12:00 How to prevent DR-TB breeding grounds  
Speaker: **Leonnie Borstlap**, Water and Sanitation Advisor, MSF, Holland
- 12:00-12:20 Pay now or pay much more later: the cost of inaction  
Speaker: **Dr Erwin Cooreman**, TB medical officer, World Health Organisation, (WHO Myanmar)

## DAY ONE - AFTERNOON AGENDA

- 12:40-13:00 **Plenary/panel discussion**  
*How can we make the response proportionate to the extent of the problem?*
- 13:00-14:00 **Lunch**
- Session Two: Models of care and challenges to treating DR-TB and TB/HIV co-infection**  
*This session will focus on responses to the problem, the implementation challenges and the opportunities particular to Myanmar and the region. How can we build consensus on the best policy and practice for moving forward with TB control today?*
- Chair: **Dr Sidney Wong**, Medical Director, MSF, Holland  
Co-chair: **Dr Thandar Lwin**, Deputy Director, National TB Programme, Myanmar
- 14:00-14:05 Welcome back and introduction
- 14:05-14:25 DR-TB model of care in Myanmar  
Speaker: **Dr Tin Mi Mi Khine**, Yangon regional TB officer, National Tuberculosis Programme, Myanmar
- 14:25-14:45 Integrated TB/HIV care programme in Myanmar  
Speaker: **Dr Ko Ko Naing**, Assistant director, National AIDS Programme, Myanmar
- 14:45-15:05 Lessons learned from Cambodia  
Speaker: **Dr Jean-Philippe Dousset**, Medical Coordinator, MSF, Cambodia
- 15:05-15:35 **Break**



- 15:35-15:55 Intensified case-finding in TB/HIV programmes in Myanmar  
Speaker: **Dr Sai Ko Ko Zaw**, Unit manager for TB, The Union, Myanmar
- 15:55-16:15 Involving the community and civil society in TB care  
Speaker: **Dr Saw Saw**, Deputy Director, Medical Statistics Division, Department of Medical Research
- 16:15-16:35 Social support for patients and their families  
Speaker: **Thiha Kyaing**, Head of Organisation, Phoenix, Myanmar
- 16:35-17:20 **Plenary/panel discussion**  
What are the main treatment challenges and how do we overcome them?
- 17:20-17:30 **Closing Remarks**
- 18:00 **Exhibition Launch - 'TB & Me: Living with Drug-resistant Tuberculosis'**  
Drinks and light nibbles upstairs in the Ruby Room

## DAY TWO - MORNING AGENDA

### Identifying Priorities for Action

*Today's session will highlight specific points of attention in the acceleration of DR-TB treatment toward universal access: from needs of particular populations to current innovations for rapid diagnostics and effective treatments regimens as well as resources to meet the needs in Myanmar.*

08:30-09:00 Registration and coffee

### Session Three: DR-TB and TB-HIV co-infection care for high-risk groups

*A flexible service delivery system and creative strategies are required to improve access to – and completion of – treatment for certain specific populations, including children, migrants, prisoners, workers, intravenous drug users and people living in conflict areas. How can we improve the early identification of cases and provide effective treatment for such populations?*

Chair: **Dr Htin Aung Saw**, Associate Professor, Special Infectious Diseases Hospital, Mingalardon  
Co-chair: **Eamonn Murphy**, Country Coordinator, UNAIDS, Myanmar

09:00-10:00 Welcome and Short Introduction

**Dr Dorian Job**, Country Health Director, MSF, Myanmar

09:10-09:30 Paediatric diagnosis and treatment of TB – challenges and new developments

Speaker: **Dr Stephen Graham**, Chair of the Sub working group on childhood TB, University of Melbourne and The Union

09:30-09:50 TB/HIV care in prisons in Myanmar

Speaker: **Dr Thant Zaw Win**, Assistant Director of Prisons, Ministry of Home Affairs, Myanmar

09:50-10:10 Peer to peer support among former sex workers and intravenous drug users

Speaker: **Dr Wai Moe Myint**, Medical Coordinator, Medecins du Monde, Myanmar

10:10-10:40 **Break**

10:40-11:00 TB/HIV care for migrants and populations in border areas

Speaker: **Dr Sein Sein Thi**, Shoklo Malaria Research Unit, Mahidol-Oxford Tropical Medicine Research Unit, Thailand

11:00-11:20 Treating TB in conflict settings

Speaker: **Dr Charles Ssonko**, TB Implementer, Manson Unit, MSF UK

11:20-12:00 **Plenary/panel discussion**

What are the solutions to treating specific populations?

12:00-13:00 **Lunch**



## DAY TWO - AFTERNOON AGENDA

### Session Four: Innovation in DR-TB diagnosis and treatment

*Early access to standard treatment soon after diagnosis is essential. In this session, we address the overriding constraint in DR-TB care of a long, toxic treatment regimen, and explore current innovations and opportunities for a shortened, effective treatment regimen.*

Chair: **Professor Tin Maung Cho**, Chair of National Expert MDR-TB Committee, Myanmar  
Co-chair: **Dr Maria Guevara**, Regional Humanitarian Representative (ASEAN), MSF

- 13:00-13:05 Welcome and Short Introduction
- 13:05-13:25 New TB diagnostics  
Speaker: **Pamela Hepple**, Laboratory Advisor, Manson Unit, MSF UK
- 13:25-13:45 New anti-TB drugs  
Speaker: **Dr Philipp du Cros**, Head of the Manson Unit, MSF UK
- 13:45-14:05 Short-course treatment for MDR-TB  
Speaker: **Prof Andrew Nunn**, Medical Research Council, London, UK
- 14:05-14:25 WHO perspective on alternative DR-TB treatment regimens  
Speaker: **Dr Erwin Cooreman**, TB medical officer, World Health Organisation, (WHO Myanmar)
- 14:05-14:40 **Plenary/panel discussion**
- 14:40-15:00 **Break**
- 15:00-17:30 **Session Five: Main priorities to support implementation**
- Sufficient, timely and continuous supply of pre-qualified drugs, a trained health workforce and adequate funds are required to avoid unnecessary mortality. However, progress is painfully slow, as the timelines for developing new drug regimens are years away. The following session will look at what resources Myanmar needs to achieve treatment scale-up for DR-TB.*
- Chair: **Dr Thar Tun Kyaw**, Director, Disease Control Programme, Department of Health, Myanmar  
Co-chair: **Paul Cawthorne**, MSF Access Campaign coordinator for Asia
- 15:00-15:05 Welcome back and introduction
- 15:05-15:25 Access to quality drugs  
Speaker: **Carole Zen Ruffinen**, International Pharmacist, MSF
- 15:25-15:45 Health systems barriers and opportunities to scale up DR-TB management  
Speaker: **Dr Thandar Lwin**, Deputy Director, National TB Programme, Myanmar
- 15:45-16:05 Funding barriers to scale-up TB control in Myanmar  
Speaker: **Eva Nathanson**, TB technical officer, World Health Organisation, (WHO Myanmar)

- 16:05-16:35 **Plenary/panel discussion**  
Funding barriers to DR-TB scale up
- 16:35-16:40 **Break**
- 16:40-17:30 **Closing Session**  
Chair: **Dr Philipp du Cros**, Manson Unit, MSF UK
- 16:40-17:20 **Panel: Summary and final discussion**
- 17:20-17:30 **Final summary and Closing Remarks**



George Butler 2013

## BIOGRAPHIES

## Welcomes and Introductions

**Dr Unni Karunakara**

Unni was elected MSF International President in June 2010. He has been involved with MSF since 1995, when he set up a tuberculosis control programme in Ethiopia. He went on to work as a medical coordinator for MSF programmes in Azerbaijan, Brazil and the Democratic Republic of Congo. Dr Karunakara has also worked in MSF's public health department in Amsterdam, moving on to become medical director of MSF's Access Campaign. Before becoming MSF's International President, Dr Karunakara was the Deputy Director of Health of the Earth Institute, Millennium Villages Project, at Columbia University in New York, and Assistant Clinical Professor at the Mailman School of Public Health, Columbia University. Dr Karunakara holds an MB, BS from Mangalore University in India, an MPH from Yale University and a doctorate in public health from Johns Hopkins University in the United States.

**Dr Jigmi Singay**

Jigmi, a former Health Minister of Bhutan, obtained his MPH from the University of California (USA) in 1986. He held senior positions in the Ministry of Health and the Royal Civil Service Commission of Bhutan. His international career included assignments in the departments of communicable diseases, health systems development and emergency and humanitarian action of the WHO Regional Office for South-East Asia. He is currently acting WHO Representative to the Republic of the Union of Myanmar.

**Dr Lucica Ditiu**

Lucica was appointed Executive Secretary of the Stop TB Partnership in January 2011. A native of Romania, Dr Ditiu is a physician and researcher who has devoted her career to improving the lives of people living in communities heavily burdened by tuberculosis (TB). Dr Ditiu began a career with WHO in 2000 within the disaster and preparedness unit of the European Regional Office. In January 2010 Dr Ditiu joined the Stop TB Partnership Secretariat in Geneva (Switzerland) to lead the TB REACH initiative, whose goal is to improve access to TB treatment. The programme awards grants of up to US\$ 1 million to applicants demonstrating that their organizations can reach poor and vulnerable populations and provide them with TB care.

**Dr Thar Tun Kyaw**

Thar Tun Kyaw is Director of Disease Control for the Department of Health, Ministry of Health in Myanmar. He joined the National Malaria Control Programme in 1994 and worked in different positions at State, Regional and National level. He was promoted to Deputy Director of National Malaria Programme Manager in 2011. Now, he is the Director of Disease Control for the Department of Health and is responsible for the National AIDS Programme, National TB Programme, National Malaria Control Programme, National Leprosy Control Programme, National Programme for Prevention of Blindness and National DHF Control Programme.

## Session One

**Dr Petros Isaakidis**

Petros has worked as a clinician and an epidemiologist for the Centre for Diseases Control and Prevention in Greece; he was in charge of infectious disease surveillance, outbreak investigations and planning for biological disasters during the Athens Olympic Games. He has volunteered and worked for MSF and other humanitarian organisations in Zimbabwe, Gaza Strip & West Bank, Kenya, Cambodia, Thailand, and India where he coordinated medical projects, in particular large-scale HIV and tuberculosis/multi-drug resistant tuberculosis projects and supported evidence generation through field-based operational research.

**Dr Philipp du Cros**

Originally from Perth, Australia, Philipp is an infectious diseases specialist with a Master's degree in Clinical Epidemiology. First working with MSF in 1999 in Burmese refugee camps in Thailand, he has since worked in Tajikistan, Uzbekistan, Malaysia, India, Nigeria, Myanmar, Uganda, Swaziland and Zimbabwe on HIV and tuberculosis programmes. He is the head of the Manson Unit, a specialist medical unit focused on improving the quality of MSF programmes through implementation and implementation research support.

**Leonie Borstlap**

Since 2004 Leonie has been working with MSF in various countries and in different positions, but has predominantly been active in the field of Water, Hygiene and Sanitation. She comes from a background of Civil Engineering with a MSc in Water, Hygiene and environmental management from WEDC, Loughborough University. In recent years she has been expanding her knowledge on hygiene and infection control in health care settings to include the particular issues related to the field of TB Infection Control. A course in "Building Design and Engineering Approaches to Airborne Infection Control" at Harvard School of Public Health was followed by fieldwork in Uzbekistan and Tajikistan, and she has also supported the Public Health Department of MSF OCA on specific issues regarding TB infection control faced in certain countries.

**Dr Erwin Cooreman**

Erwin Cooreman is team Leader of the WHO TB unit in Myanmar. Erwin graduated as a Medical Doctor from Ghent University (Belgium) in 1994, he started his career in international health as a junior medical officer for the Belgian Red Cross in a refugee camp in Burundi. He obtained the Diploma in Tropical Medicine and Hygiene from the Liverpool School of Tropical Medicine (United Kingdom) in 1995. From 1995-2000 he led a TB and leprosy control project in Bangladesh. In November 2000 he was recruited by the World Health Organization and, after working in Papua New Guinea for four years, took up the position of Medical Officer (TB) in the Regional Office for South-East Asia, New Delhi (India) and in 2007 in Dhaka (Bangladesh). In 2011 he moved to Yangon.

## Session Two

**Dr Tin Mi Mi Khine**

Tin Mi Mi Khine has been working in the National TB programme since 1996. She has experience working in Shan and Kayah States and now works in the Yangon region. She has conducted research into the delay in TB diagnosis and treatment, factors for defaulting TB treatment among TB patients and the situation of private laboratories performing sputum AFB microscopy in Yangon Division. She has also taken part in the development of a TB counselling guide book and the development of MDR-TB management guidelines, training, implementation, monitoring, supervision and evaluation.

**Dr Ko Ko Naing**

Ko Ko Naing is the assistant director for the National AIDS Programme in the Department of Health, Myanmar. In 2004, Ko Ko Naing completed a postdoctoral study in Epidemiology at the University of California, Los Angeles and received a Masters of Medical Science (Public Health) and Diploma in Dermatology & STD from the University of Medicine(1), Yangon. Ko Ko Naing began as a township health officer in Salin, Magway and later become a medical officer in the National AIDS programme. He is currently the focal person for the 100% Targeted Condom Promotion Programme and is also responsible for STI and TB/HIV services in Myanmar.

**Dr Jean Philippe Dousset**

Jean Philippe is medical coordinator of MSF France in Cambodia, where the organization set up a comprehensive TB project in the Kompong Cham province, with special focus on TB in children, co-infection with HIV and TB resistance detection and case management. Jean-Philippe has a MSc in Public Health in Developing Countries from the London School of Hygiene and Tropical Medicine and his previous experiences were focusing on HIV/AIDS prevention among high risk populations and setting up OI/ARV centres in Cambodia.

**Dr Sai Ko Ko Zaw**

Sai Ko Ko Zaw works as a Unit Manager for Tuberculosis in Myanmar for the International Union against Tuberculosis and Lung Disease. They are currently launching a Program to increase the catchment of TB suspects (PICTS project) which involves successful implementation of active case finding through community mobilisation and using innovative technologies. Sai Ko Ko Zaw has a degree of MBBS from University of Medicine, Mandalay, Myanmar. He has experience in integrated TB/HIV care services and has conducted operational research on the issue; including routine provider-initiated HIV counselling and testing (PICT) of TB patients in Mandalay, creatinine clearance rate of HIV patients in Myanmar and Prevalence of hepatitis virus (HBV & HCV) among HIV patients in Myanmar.

## BIOGRAPHIES

**Dr Saw Saw**

Saw Saw is a Deputy Director from the Department of Medical Research (Lower Myanmar) and visiting lecturer of the University of Public Health under the Ministry of Health, Myanmar. She worked as a short term national consultant for TB at the WHO representative Office to Myanmar to support Myanmar Medical Association (MMA) and National TB Programme (NTP) for research capacity strengthening and operational research. She has been conducting research on TB for more than 15 years. Her research focuses mainly on community-based activities of NGOs and Civil Societies in prevention and control of TB and HIV. She obtained her PhD from the University of Melbourne, Australia with WHO/TDR support in 2007. Her thesis was titled: "Strategies for Public-Private Partnership in TB Control: involvement of private practitioners in Myanmar".

**Thiha Kyaing**

Thiha founded the Phoenix association in 2005 and is now head of the organisation. The Phoenix association is a self-help group of people living with HIV, providing alternative income sources for its members and supporting their medical and social needs and mobilising communities of people living with HIV and AIDS. Thiha graduated from Yangon University with a degree in Mathematics and previously worked as a sailor. Whilst setting up the Phoenix Association Thiha also worked for international HIV/AIDS Alliance as a programme officer, as well as working with MSF as a Leadership Facilitator for people living with HIV and AIDs in Myanmar.

**Session Three****Prof Steve Graham**

Steve is Professor of International Child Health with the University of Melbourne and Consultant in Child Lung Health with the International Union Against Tuberculosis and Lung Disease (The Union). He is a paediatrician with more than 20 years of experience from working in TB endemic settings in Africa and Asia-Pacific, has provided technical support and training to many National TB Programmes in those regions, and works closely with the Global TB Programme of WHO on policy relating to TB in children. His research has covered a broad range of common causes of childhood disease including pneumonia, HIV, TB, invasive sepsis, malnutrition and malaria. Steve is current Chair of the Childhood TB subgroup of the WHO Stop TB Partnership.

**Dr Thant Zaw Win**

Thant Zaw Win is an assistant director and deputy chief medical officer of the Prison Department in the Ministry of Home Affairs. He participated in the regional workshop on scaling up engagement of prisons in TB control which was held in Indonesia in 2012.

**Dr Wai Moe Myint**

Wai Moe Myint is currently working as Medical Coordinator in Medecins du Monde (France), he is committed to the work in HIV/AIDS prevention and care activities to most at risk populations; former sex workers, men who have sex with men and people who inject drugs since 2006. Wai Moe Myint has contributed to capacity building and supporting the peer to peer adherence support activities for TB/HIV programme.

**Dr Sein Sein Thi**

Sein Sein Thi currently works in SMRU TB project in Tak province, Thailand, providing TB and TB/HIV services to Myanmar migrants, cross border and displaced populations. Before this she spent more than seven years working with MSF mainly in the area of TB/MDR TB and TB/HIV with MSF in various countries across Africa, East Europe and Asia including Thailand and Myanmar. She has worked with specific populations from Myanmar in Thailand for four years with MSF and World Vision. She studied medicine in Myanmar and has a Master's degree in public health from the University of Sydney.

**Dr Charles Ssonko**

Charles is a Medical doctor and has worked extensively in the field of HIV and TB with MSF in Africa (Zambia, Zimbabwe, Nigeria- started ART/TB/PMTCT programmes); Asia (HIV-TB coordinator/advisor Myanmar); and parts of Eastern Europe (treated HIV and TB in Transnistria-Moldova). He currently works as a TB/HIV implementer- starting HIV/TB/MDRTB treatment in unstable settings across MSF sections; Charles Ssonko has a bachelors of medicine and bachelors of surgery (MB.ch.B) from Makerere University –Kampala; A Msc in Public health from University College London and a diploma in tropical medicine and hygiene DTM&H at the London school of hygiene and tropical medicine.

**Session Four****Pamela Hepple**

Pamela Hepple has worked for MSF for 10 years, 8 of those as a laboratory specialist based in the Manson Unit, in MSF UK. She specialises in TB diagnosis, and supports MSF's TB culture projects in Chechnya, Uzbekistan and Swaziland, as well as general laboratory activities in Africa and Asia. Pamela studied Microbiology at Trinity College, Dublin, and has a Masters degree in the Control of Infectious Diseases, as well as a Doctorate in Public Health, from the London School of Hygiene and Tropical Medicine.

**Dr Philipp du Cros**

Originally from Perth, Australia, Philipp is an infectious diseases specialist with a Master's degree in Clinical Epidemiology. First working with MSF in 1999 in Burmese refugee camps in Thailand, he has since worked in Tajikistan, Uzbekistan, Malaysia, India, Nigeria, Myanmar, Uganda, Swaziland and Zimbabwe on HIV and tuberculosis programmes. He is the head of the Manson Unit, a specialist medical unit focused on improving the quality of MSF programmes through implementation and implementation research support.

**Prof Andrew Nunn**

Andrew is an associate director and senior statistician at the UK Medical Research Council's Clinical Trials Unit. He has been involved in research programmes for the treatment for tuberculosis for over 40 years including the development of short course chemotherapy. Currently he is co-chief investigator of a trial of a 9-month regimen for MDR-TB.

**Dr Erwin Cooreman**

Erwin Cooreman is team Leader of the WHO TB unit in Myanmar. Erwin graduated as a Medical Doctor from Ghent University (Belgium) in 1994, he started his career in international health as a junior medical officer for the Belgian Red Cross in a refugee camp in Burundi. He obtained the Diploma in Tropical Medicine and Hygiene from the Liverpool School of Tropical Medicine (United Kingdom) in 1995. From 1995-2000 he led a TB and leprosy control project in Bangladesh. In November 2000 he was recruited by the World Health Organization and, after working in Papua New Guinea for four years, took up the position of Medical Officer (TB) in the Regional Office for South-East Asia, New Delhi (India) and in 2007 in Dhaka (Bangladesh). In 2011 he moved to Yangon.

**Session Five****Carole Zen Ruffinen**

Carole Zen Ruffinen is a pharmacist specialising in ensuring the availability of and access to quality-assured medicines for TB and NTDs, as well as pharmacy management and the management of rational drug use in the field. She joined MSF in 2010, working as a pharmacist in Haiti, Niger and the Democratic Republic of Congo before moving on to focus on tuberculosis and neglected tropical diseases at MSF International in 2012. Before working for MSF, Carole spent seven years in the private health sector in Switzerland, then three years with Phamacists Without Borders, taking on assignments in Sri Lanka, Burkina Faso and Myanmar. Carole studied pharmacy at the Swiss Federal Institute of Technology in Zurich, and completed a Master of Science in International Health (the tropEd programme) at the Swiss Tropical Institute in Basel, Switzerland.

**Dr Thandar Lwin**

Thandar Lwin has been working in National TB Programme since 1994. She graduated M.B., B.S, from Institute of Medicine (2), Yangon in 1988 and M.Med.Sc (Public Health) from Institute of Medicine (1), Yangon in 1999. She achieved Master of Philosophy (Health Sciences) from Center for International Health, University of Bergen, Norway in 2004. She had local and international trainings in the fields of TB epidemiology, TB/HIV, M/XDR-TB and Operational Research Methodology. She has also worked as Short Term National Consultant at WHO in 2006 & 2008. She is now working as Programme Manager of National TB Programme since 2009 taking leadership for Programme Management, Research works and Coordination with other implementing partners in TB control of Myanmar.

**Eva Nathanson**

Eva Nathanson holds two master degrees; one in medical biology from the University of Lund, Sweden; and one in health, environment and development from the Free University of Brussels, Belgium. She has spent 15 years working with WHO at its Regional Office for Europe (1998-2002), Headquarters (2003-2010) and Country Office for Myanmar (2010 until present). Much of her work has focused on the fight against MDR-TB. She has contributed to the global policy development on MDR-TB management and has been part of the Green Light Committee for access to reduced priced and quality-assured second-line anti-TB drugs.

## Acknowledgements

Many thanks to the Ministry of Health of the Republic of the Union of Myanmar, the World Health Organisation and the Médecins Sans Frontières (MSF) mission in Myanmar for all the cooperation and work that has gone into the symposium.

## Glossary

<b>DR-TB</b>	drug-resistant tuberculosis
<b>DST</b>	drug susceptibility testing
<b>MDR-TB</b>	multidrug-resistant tuberculosis
<b>PMDT</b>	programmatic management of DR-TB
<b>MSF</b>	Médecins Sans Frontières/Doctors Without Borders
<b>NTP</b>	National Tuberculosis Programme
<b>PAS</b>	para-aminosalicylic acid
<b>TB</b>	tuberculosis
<b>WHO</b>	World Health Organisation

## Definitions

**Drug-resistant tuberculosis (DR-TB):** Describes all strains of TB that show resistance to one or more of the first-line drugs. The term is used in this pamphlet to include all of the possibilities listed below.

**Monodrug-resistant tuberculosis (Mono DR-TB):** Describes TB that is resistant to any one first-line drug.

**Polydrug-resistant tuberculosis (PolyDR-TB):** Describes strains that are resistant to more than one first-line TB drug, but not to both isoniazid and rifampicin.

**Multidrug-resistant tuberculosis (MDR-TB):** Describes TB that is resistant to at least both isoniazid and rifampicin, the most powerful first-line TB drugs.

**Extensively drug-resistant tuberculosis (XDR-TB):** Describes TB that is resistant to isoniazid and rifampicin, and also to second-line drugs, including at least one from the class of antibiotics known as fluoroquinolones, and at least one of the three injectable second-line drugs (capreomycin, kanamycin and amikacin).

## TB & ME: LIVING WITH DRUG-RESISTANT TUBERCULOSIS

**Photo Exhibition Launch**  
**Thursday 22 August 18:00**  
**Ruby Room, Inya Lake Hotel**

*Please join us in the Ruby Room at the Inya Lake Hotel for drinks and light nibbles to launch the MSF DR-TB exhibition.*

*Georgia Butler 2013*



