

## **International Comprehensive Course on Epidemiology and Control of Tuberculosis for Latin American countries**

### **Objectives:**

After completing the course, participants should be able to know and understand:

1. The origin and history of the TB and why its adaptability to the human species.
2. The basic principles for TB control
3. The biological characteristics and conditions of *M. tuberculosis* growth
4. The basic concept in TB patients with poor clinical progress
5. The different definitions of resistance
6. The most likely reasons behind a relapse, bad adherence and treatment failure.
7. The possible inadequacies in the management of initial cases at NTP programs level and the likelihood to select resistance to anti-TB drugs with inadequate strategies
8. The role of the clinical and radiographic findings in the diagnosis of TB and MDR/XDR-TB; and in the follow-up of the patients.
9. The definitive role of the bacteriological procedures in the diagnosis of TB and MDR/XDR-TB, especially of the smear and culture.
10. The approach to MDR/XDR-TB diagnosis and the value of drug susceptibility testing, including rapid molecular tests.
11. The role of GeneXpert and other molecular tests in the diagnosis of TB, especially in HIV infected patients, and MDR/XDR-TB
12. The possible case-finding strategies for MDR/XDR-TB and prioritize them based on risk factors and resources
13. The bacteriological fundamentals of the initial treatment of TB cases and the initial treatment in special situations without MDR-TB
14. The fundamentals and rules to design a TB treatment according the pattern of resistance.
15. The best regimens for the treatment of mono and poly-resistant TB
16. The principles of MDR/XDR-TB treatment (number and rationalization of second-line drugs, duration of intensive and continuation phases, role of surgery, standardized vs. individualized regimens)
17. To address MDR/XDR-TB treatment in special situations: children, pregnancy, diabetes and HIV
18. To gain a sound understanding of the actions of the different anti-TB drugs: drug targets, cross resistance, different roles
19. To recognize and address adequately the possible adverse reactions to first and second anti-TB drugs

20. To develop skills as facilitators/trainers, and enhance their ability to replicate the course at the provincial/district level
21. Describe the current global epidemiologic situation of TB and drug resistant tuberculosis

**Lead Facilitators:** Dr. Jose Caminero Luna and Ms. Edith Alarcon

## **Agenda**

### **2 May**

8.00-8.30	Registration
8.30-9.00	Opening remarks - <b>Edith Alarcon and Jose Caminero Luna</b>
	Introduction of participants and facilitators
9.00-9.30	Pre-Course Evaluation Test
9.30-10.00	Learning objectives of the course - <b>Edith Alarcon and Jose Caminero Luna</b>
10.00-11.00	Origin and History of TB: Can the TB be eradicated in the next decades? <b>Jose Caminero Luna</b>
11.00-11.15	Break
11.15-12.15	Biological characteristics and condition of <i>M. tuberculosis</i> Growth <b>Jose Caminero Luna</b>
12.15-13.15	Basic concepts in TB: Bacillary populations of <i>M. tuberculosis</i> Relapses, Failures, Defaulters, poor adherence <b>Jose Caminero Luna</b>
13.15-14.15	Lunch
14.15-15.00	Epidemiology of tuberculosis and drug resistance in the country <b>Edith Alarcon</b>
15.00-16.00	Global epidemiology of TB and MDR-TB Analysis of factors contributing to MDR- and XDR-TB Transmissibility, virulence and fitness of resistant strains of <i>M. tuberculosis</i> and its possible influence for the future <b>Edith Alarcon</b>
16.00-16.15	Break

16.15-18.00 Working Groups (4-5 groups with 4-5 participants). Practical exercises addressing the topics presented in the day.  
Discussion of national TB and MDR/XDR-TB Cases

### **3 May**

8.00-8.45 Review of the Highlights Day 1 - **Edith Alarcon and Jose Caminero Luna**  
8.45-10.00 Diagnosis of TB Infection: Tuberculin skin test and IGRAs - **Edith Alarcon**  
10.00-11.00 Clinical and Radiography manifestations of TB - **Jose Caminero Luna**  
11.00-11.15 Break  
11.15- 12-30 Conventional laboratory procedures: Smear, culture and Identification of species - **Jose Caminero Luna**  
12.30-13.15 Other procedures supporting the TB diagnosis: histologic findings, adenosine desaminase (ADA), and others - **Jose Caminero Luna**  
13.15-14.15 Lunch  
14.15-16.00 Drug resistant TB - **Jose Caminero Luna**  
16.15-18.00 Working Groups (4-5 groups with 4-5 participants). Practical exercises addressing the topics reviewed in the day.  
Discussion of national X/MDR-TB Cases  
**Edith Alarcon and Jose Caminero Luna**

### **4 May**

8.00-8.45 Review of the Highlights Day 2 - **Edith Alarcon and Jose Caminero Luna**  
8.45-11.00 Basic concepts in drug resistance  
Natural resistance. Primary or initial resistance (new drug resistance)  
Secondary or acquired resistance (previously treated drug resistance)  
Transient resistance. Poly-resistance, MDR and XDR  
Possibilities of drug resistant after failures, relapses, defaulters and poor adherence - **Jose Caminero Luna**  
11.00-11.15 Break  
11.15-13.15 Diagnosis of drug resistant tuberculosis  
Risk factors for drug resistance  
Classification of MDR-TB

The importance of the history of previous drug intake by patient and drug utilization in the country

Support of the Drug susceptibility testing for management of drug resistant T

Techniques for rapid diagnosis of drug resistant TB (LPA, Xpert, etc)

**Jose Caminero Luna**

13.15-14.15 Lunch

14.15-16.00 Infection control - minimal requirements given limited resources

**Edith Alarcon**

16.00-16.15 Break

16.15-18.00 Working Groups (4-5 groups with 4-5 participants). Practical exercises addressing the topics reviewed in the day.

Discussion of national X/MDR-TB Cases

**Edith Alarcon and Jose Caminero Luna**

**5 May**

8.00-8.45 Review of the Highlights Day 3 - **Edith Alarcon and Jose Caminero Luna**

8.45-10.00 Principles of Initial Treatment of TB

Intermittent regimens.

Special situations in the treatment of the TB

**Edith Alarcon**

10.00-11.00 Treatment of the TB According the Pattern of Resistance (1)

Treatment of Susceptible TB

Treatment of Mono-Poly Resistant TB

**Jose Caminero Luna**

11.00-11.15 Break

11.15-13.15 Treatment of the TB According the Pattern of Resistance (2)

Treatment of MDR/XDR-TB

Duration of the intensive and continuation phase of treatment

Role of the surgery in the management of drug resistant TB

Standardized and individualized treatment regimens

**Jose Caminero Luna**

13.15-14.15 Lunch

14.15-16.00 Tuberculosis, MDR-/XDR-TB and HIV: Update and management

**Jose Caminero Luna**

- 16.00-16.15 Break
- 16.15-18.00 Working Groups (4-5 groups with 4-5 participants). Practical exercises addressing the topics reviewed in the day.
- Discussion of national X/MDR-TB Cases

**Edith Alarcon and Jose Caminero Luna**

**6 May**

- 8.00-9.00 Review of the Highlights of the Course

**Edith Alarcon and Jose Caminero Luna**

- 9.00-11.00 Reasoning the best treatment options for a National TB Programme (NTP)
- What is the best Category I Regimen to recommend in an NTP?
- Category II regimen - origin and current rationale
- Which is the most appropriate approach for:
- Relapses and Defaulters to Category I regimen
  - Failures to Category I regimen
  - Failures to Category II regimen
  - MDR-TB Patients in the different scenarios

**Edith Alarcon**

- 11.00-11.15 Break
- 11.15-12.45 Adverse Reactions to First and Second Line Drugs
- Practical approaches and appropriate management
- Jose Caminero Luna**
- 12.45-13.15 Avoiding stigma with the TB patients: Ethical issues in the management of TB patients - **Edith Alarcon**
- 13.15-14.15 Lunch
- 14.15-18.00 Practical Exercises

**7-10 May – NOT FOR CME ACCREDITATION**

Field Visits (health's centres, laboratories, central unit of the NTP), Information system, technical assistance methodology and other operational issues